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THE

PEDAGOGICAL SEMINARY.

AN

INTERNATIONAL RECORD OF EDUCATIONAL LITERATURE, INSTITUTIONS AND PROGRESS.

EDITED BY

G. STANLEY HALL,

President of Clark University and Temporary Professor of Psychology and Education.

VOL. I.

1891.

WORCESTER, MASS.:
PUBLISHED BY J. H. ORPHA.

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JANUARY, 1891.

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EDITORIAL.

Seminary and laboratory are now perhaps the noblest words in the vocabulary of higher education. The former is now coming to mark the latest, closest, and most fruitful contact of the best instructors with the most advanced learners. It inherits and perpetuates the best traditions of the ancient Grove and Porch, the platonic dialogue and esoteric mysteries. It is the pedagogic adytum which only the few fit must enter. Here teaching and learning sometimes become a passion. Here the great masters have inspired, and then passed on the sacred torch of pure science to the their chosen disciples. When German universities were growing dry and formal, it was the seminary that unfolded new methods and re-animated every humanistic department in which it obtained a foot-hold, and many of the most important recent advances, especially in the fields of history and antiquities, are direct products of seminary impulses. Even the method of lectures, although by no means superseded as yet, is sometimes subordinated and made tributary to seminaries. In France still more recently, where nearly all higher instruction was given in the form of lectures open to the general public, it was seminaries under several names, which have inspired several thousand of the best trained and most gifted future leaders to a devotion to pure science unparalleled in the history of that country. The seminary movement had inveterate prejudices to overcome, and was accused of being cloisteral, mystic and secret; but in the words of a French leader, it has shown how great a light and heat could be evolved by a policy of university concentration, which was the exact opposite of university extension, which excluded the public and focused all its care upon the few best. The entire success of a seminary depends on the rigor with which all but the few who are able and fit to be active participants are excluded. A single feeble or untrained man mars its tone.

A seminary is not a library club where books are shown and described, or reading courses marked out; it is not a smoke-talk with subsequent questions, nor a conference for joint conversation on a pre-announced subject, nor a lyceum

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for debate, nor a series of meetings for reading select authors in common, or reporting on books or current journals, nor an academy where the results of original research are reported, nor a gathering where students read their own independent studies to each other. It is a new synthesis of select elements of all these, but subordinated to and unified in an higher main purpose and method. While such seminaries exist in other subjects there is none in the world to-day in education that is at all adequate or worthy, and this journal and the department it represents marks in its first number only the foundations of the high pedagogical seminary we have undertaken the laborious task of developing, and the later stages of the unfoldment of which we hope future numbers will show.

While seminary methods vary somewhat in different subjects, they are in the main clear and obvious in this field, and should embrace two main lines of work.

I. The comparative study of contemporary institutions and literature in all leading countries. No American library has ever gathered the important records, literature or journals of education in other lands, and the Bureau of Education has lacked funds to fill the gaps, many and vast, in its collections, although its books are numerous enough, had they been wisely selected instead of being mostly composed of what happened to be sent in by way of exchanges and otherwise, to fill all our requirements twice or thrice over. The bureau is without any such catalogue as makes every resource of the smaller library of the French museum so readily accessible to every comer. We have thus been obliged at much labor and expense to begin such a collection for ourselves. Both in this work, and to supplement our temporary deficiences, we have been kindly and generously aided by brief loans, and otherwise not only from the Bureau, but from the library of Harvard University, to the directors of both of which THE SEMINARY takes great pleasure in expressing its obligations. In this respect, we hope soon to be independent; thanks to the wisdom and beneficence of the founder and trustees of this university.

Another difficulty, serious yet temporary, arises from the present unparalleled isolation of our country in educational matters. When county, state, interstate, and then national teachers' meetings were first proposed in this country, they were

all resisted as useless, unsettling, or as tending to foster a critical conceit. One city superintendent said that the best teachers would stay at home, do what they were told, and not go in quest of new and other ways. No one now doubts the great utility of these associations. There are still some—always those who do not know them—who disparage a still further extension of pedagogic interest and knowledge to international fields. While nearly every country in Europe and even South American states send experts to other lands, our own included, to study and report at state expense on every new departure in every phase and grade of education, as strategists spy out every new military movement of a rival; while no professor in an university is respectable if he does not know the latest discoveries in his subject in all lands; while no industry is secure, unless it follows even at great expense the markets and processes by which it might be short-circuited and undersold in other lands; while most of the best and most lasting that has been either done or said in our educational history in past or present is by those who take this broad comparative view the method of which is now the soul of every science; it is plain that the first step is to launch every serious student of education upon this way and field of work. He must be put in touch with the best that is being done and said in other portions of his own and in foreign lands, which must be utilized as experiment-stations for his benefit. It is hard to say which is saddest, the waste of attempting expensive educational experiments which have been proven useless or impracticable elsewhere, or the timidity and conservatism which refuses to make departures already approved as easy, and of great utility and economy. The repertory of devices, methods, ways, means and ideas should be copious, and only then will the student learn to avoid the folly or affectation of imitating what can succeed only in a different environment of race, government, creed, etc., or of refusing to utilize what is as practicable everywhere as a mechanical invention because it is of foreign origin. In view of our isolation such information is our first and greatest need. Our educational leaders have had no time to acquire this knowledge, and for the editor his work is an attempt at self-education for the better discharge of future duties.

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A third obstacle in the way of such work is the undue prevalence of hard and settled dogmas of both the philosophy and method of education. Its problems are too often discussed and even settled here far too abstractly. Is there a philosophy, or a science of education; is it a profession; education from the standpoint of Hegel, Spencer, and lately in this country Herbart; is an idealistic standpoint in education pantheistic in its tendency or is the standpoint of scientific psychology materialistic; one condemns object lessons or school museums because they savor too much of the empyricism of Locke; another would turn out or restore grammar because its distinctions are historically too closely associated with Aristotle's categorics; normal teachers too often develop much of their work from abstract theories of analysis and synthesis and their relations; or the home, state and church are made the abstract basis of deductions from which practical questions are judged; the study of children is useless because it is a part of empirical psychology which is but a *branch* of philosophy;—these are concrete type-cases which might be greatly extended, and each illustrated by a list of recent papers and addresses. This narrows, and is an education in prejudices which has three bad results. It cripples good men by giving them "apperceptive organs," or centres of educational interests that are artificial and useless, and breeds a distate for patient and hungry all-sided search after what *is* in fact and truth, and begets ignorance of the partial truth in all opposing theories. There is no philosophy or science yet developed that is large enough to cover education. To rely on any one or all of these is a sign of that precocity that marks sterility in a student, and of unpedagogic methods in teaching education—the worst taught of all subjects—on the part of its professors.

The natural method, then, in the higher study of education is to begin by gathering a rich material of ideas, institutions systems in the past, but especially living and present, and making this carefully prepared collection the basis of our discussions which cannot then fail to be definite and meaty, and will not go to seed in dogmas, formulæ and abstractions. This collection must be copious, selected with great care, and the digests or reports upon each book or paper must be a perfect minature of the original, embodying its

every new and salient phrase and idea, but boiled down to the utmost consistency. It ought thus to strive to be more striking than the original itself where the transitions are more gradual and the whole not seen in all its proportions at once, and to make it unnecessary for all but very special purposes, and for these to serve as a competent guide or finder. This work is generally done so wretchedly that the invaluable service such work can be made to render is now almost unknown. Our first endeavor has been to make these digests as perfect and as attractive as possible, and the merit of our first numbers depends upon our success in this effort. Ability to do this well should be the first training in the pedigogical seminary, and these digests are our data, our museum of specimens on the basis of which pedagogic study must begin, and out of which such science or philosophy of education as is possible is to be evolved with constant reference to hygiene, psychology and anthropology.

This must be distinguished as elementary, higher, technical, industrial, normal, state or private education, etc. It should cover buildings, curricula and methods in each subject, including music and fine arts, hygiene, supervision and inspection, books both for teachers and pupils, and illustrative apparatus, of which though we accept no advertisements no superior specimen should go unnoticed, the training of the blind, deaf, idiots, criminals and other defectives, the three learned professions, the relations between government and science, and the education of civil servants, the history of education, libraries, individual educational leaders, and special institutions, and also, presented in the same concise and objective way, the current ethical, philosophical and psychological ideas and theories. This material, which represents the field of this Journal, must be grouped either index-wise as above, or by countries, or following the stages of the develepment of the child, or in any other individually preferred scheme or system. The main point is that every seminary student should have *all* the material which he has gathered or other members have contributed to the common pool arranged in a lecture book, or in some other way, so that he may ever after give new matter its proper place beside that with which it is most closely connected, and be able to refer at once at any time to what he has. These printed abstracts should all appear

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by the aid of scissors and paste in their place with the rest. Perhaps the digests in the Journal of Psychology, which were made on the same plan and with the same purpose have in no way done better service than in thus bodily enriching the lecture books or notes of young professors during the critical first year of their academic activity.

II. These seed thoughts thus planted in the seminary must take root and grow into the practical forms of plans for constant educational improvement under the stimulus of discussion, comparison, visitations of institutions and the constant infusion of philosophy as literature rather than as dogmas, and with constant reference to the natural history of the child and youth. This periscope of key thoughts and words must be not only read but studied. This stage of the work must be present from the first, but will be further developed and described later, and we trust be manifest in printed treatises. So far nothing has exceeded the interest, stimulus or profit of the discussions as to what subjects were ripe or opportune for treatment, and how to study and to present them.

THE SEMINARY thus attempts this hardest, most expensive and unremunerative work in the belief that it is the chief need in the present distracted, isolated and disjointed state of both higher and lower education in this country. It addresses the few and not the many, and it is hoped may serve the needs and interests of the following classes:

I. Prominent laymen, such as trustees, legislators, editors, professional men, and men of affairs who take an intelligent interest in education and would see the best methods of business and common sense applied in this field. From this class have proceeded most of the best educational reforms.

II. Administrators, especially university and college presidents, and state and city superintendents, who with their great responsibilities often lack time to seek original sources of information.

III. Professors of pedagogy and principals and teachers in normal schools, who rarely read foreign languages well or have access to the literature they would most profit by.

IV. The professors and students in the educational department of this university, in the scheme of work of which this Journal has a special part.

EDUCATIONAL REFORMS.

One hundred years ago a remarkable story appeared in Europe. It was prolix after the fashion of that day and is now rarely read. Yet its characters and action were as real and as new in fiction as Kipling's best, while the author's passion for moral and social reforms was as all controlling as Tolstoi's. It was a tale of homely life in a Swiss village, of peasants who beat their wives, and of dirty children who stole potatoes, and only on gala days had the cream left on their milk. The good preacher was growing duller, the doctor more quackish, the schoolmaster more mechanical. The squire, who also kept the beer house, was getting every one in his debt and extracting and using for his own wretched ends all domestic secrets. There was the gossip, the hypocrite, the liar, the fool, the sot, and everywhere increasing superstitution, scandal, intrigue and vice.

But there was one good woman in this dismal hamlet, Gertrude, the mason's wife, who taught her children cleanliness, courtesy, maxims, hymns, prayers and simple industries with such devotion and suceess that the neighbors begged that their children might come too, and soon began to come to see for themselves. An old nobleman visited her home-school and found a real vocation in starting a school himself. The pastor grew interested, and realized that his sermons had been dry, and began to preach in earnest. The spirit of home life and mutual improvement appeared. The beer house ceased to be the centre of the village life. A few citizens met weekly to discuss the larger educational questions of public and private weal. At length a Royal Commission was sent to study Bonal, which had become the thriftiest village in the realm, and reported that they had discovered here the true principle of reform, prosperity and universal government in education, with Gertrude's school at the root of all.

For Bonal is the world. All its degradations are but the natural offspring of ignorance, and Gertrude is the good teacher by whom alone society, state and church can be regenerated. This tale of Pestalozzi's shows us what a simple and unlearned man can do if he is in earnest, and if his cause is great. It was read everywhere; it was wept over; royal personages came to see the author, and gave him presents and decorations, and many greater men than he have since lit thei torches at the fire he kindled.

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Sixteen years later, in 1806, the power of Prussia was shattered at a blow by the battle of Jena. Its army was swept away; its allies, industries and trade gone. The country was impoverished and exhausted and its capital garrisoned by French soldiers. Its soil had never been fertile nor its spirit practical. Its military situation, with strong nations on all sides, was the worst in history and its record had shown more discord than unity. The race had never felt such humiliation and the future had never seemed so dark. But the German stock was still vigorous and on every hand the cause of this unexpected collapse was explained. Scharnhorst began to plan a comprehensive reorganization of the military system on its present basis. Stein set about reconstructing the land laws and the status of the peasants. Jahn founded everywhere his patriotic *turner* societies and preached again the gospel of ancient Greece, that only strong muscles can make men great and nations free. But the key-word which guided and unified all was spoken by Fichte in his so-called "addresses to the German nations," which were given in Berlin every Sunday evening for an entire winter to large audiences of the best classes, with Napoleon's sentries at the door, and his spies scattered through the hall. He said in substance this: —

We have yet left us German bodies, large, strong and healthy to the core, a marvellous language all our own and not agglomerate of many tongues like English, and a pure blood never mixed with other races. We have wrought out the Reformation, the greatest task the human spirit has yet achieved, and our ancestors call to us not to let the work they died in doing be in vain. We carry the light and the hope of the world. If we sink, freedom and humanity sink with us. There is one plain and only way for patriotic recreation. It is not primarily by armies or legislation, but we must rise like Bonal by the slow and sure processes of national education. We must live for our own children, training their bodies and minds as was never done in the world before. Schools have been the one product in which the German spirit has already excelled. We have set the human spirit free, have preached, taught, lived, and believed in ideas and ideals. We must make education our supreme task; our duty of duties. We must realize the platonic republic where the wisest ruled and education was the chief problem of statesmanship. This policy must be our destiny. Our leaders must be priests of Truth and in her pay. They must think fearlessly in all directions; must investigate and discuss, do and suffer all in the world's great holy cause of science and learning. To this end he invoked all ranks and classes. For thus not only the united Fatherland, long hoped for, long delayed could become real, but men

of a higher type and order of existence than had yet appeared would be developed.

Thus Fichte, idealist and enthusiast, spoke and was heard as no man had spoken or been heard since Luther. For him education was the one divine cause in the world; a new dispensation of religion itself. In accordance with his conceptions, but by far more practical men than he, the University of Berlin was founded and a national policy was defined making education the test of all. Along these lines the Fatherland has become the most effectively governed state, and its army the strongest since ancient Rome. Just as the Reformation slowly pervaded other lands so Germany has set the educational fashions for most nations of continental Europe, not to speak of Japan and South America. Her methods and ideas have been especially transforming since the war of 1870 made manifest the strength this policy had developed in half a century. Her conquests are now spreading to the world of industry and trade, and France has shown her true greatness by wise imitation of her conqueror.

We can not study too carefully here the chief feature of this great educational state. Its magnificent campaign against ignorance opens with matchless vigor. Every parent must send his child to school from six to fourteen—in many places they still pay a trifling monthly fee—or he is, as Luther held, an enemy of the state. He might almost as well refuse to pay taxes or fight an invading foe. In 1888 of about five million German children only 5145 were absent from school without cause. In Berlin in the same year 14 boys and one girl of school age evaded the law, but this result was secured by fining 1020 parents and arresting 1088. Illiteracy proper is practically extinguished.

In this country 19 states have no compulsory law at all in 1890, and where it exists it is rarely enforced. In 1888 seven per cent. of the total white male adult population, and eleven per cent. of the adult white female population, could not read or write. In 1880, one sixth of the voters in the former slave states could neither read or write. Had their statistics been computed for children of ten, as is often done, or included the colored population, or been based on tests as rigidly enforced as in Europe, it is needless to say that the results would have been far sadder.

Again, every teacher of even the lowest grades in Germany must have had three and in some provinces four years of professional normal training, and at least one, and in some places two, trial or practice years. Here, in 1886, but nine, and those among the best states, reported on this point, but even in these only one teacher in twelve was a Normal graduate,

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and one-fourth and probably more of all our teachers leave the business every year. Again, and perhaps more important, the syllabus of each subject, and in less degree the curriculum of subjects, is central and indeed canonical. All text books must be made on its pattern or they are not licensed. A capital illustration of syllabus, standard, programme, grammar or norm, as it is variously called, is at hand in the new and much discussed code in geography for the Cadets in 1889. It contains 40 pages and embodies all that the highest science or the Universities, in conference with the best pedagogic wisdom, can do for boys in this field. Besides the topics in careful order it has copious references to hand books, maps, etc., which the teacher must have and work up. By such means it is sought to make courses of study rich and meaty, condensed and unified, so that the teacher shall be absorbed in and proud of his calling; that children shall have interest in their work, the absence of which is one chief cause of over-pressure, and to save one if not two years in passing up the grades. If the traditions of the trivium and quadrivum still incline to rigidity in the German curriculum, we are in danger of the extreme of laxity and confusion. Here it is often tediously attenuated, shaped by text-book makers and tinkered by viewy committee men, a teacher with hobbies, and in a series of cases has been successfully defied in the courts by crochety parents. Other suggestive features of the German system may be mentioned. The sad waste of our religious questions is made impossible by a very simple expedient. Catholic, Jewish and Lutheran teachers, approved or named by these denominations, give religious instruction from school to school to each child in the faith preferred by the parent. Text books in the school room, and text books makers without, are servants and not masters. These books are commonly smaller, fewer, cheaper and their matter often condensed almost to a skeleton, while books for teachers are much more numerous. Small libraries for their use as well as quite large collections of charts, diagrams, specimens and illustrative apparatus are often found in schools of our grammar grade. The 183 school houses of Berlin contain about 100,000 carefully selected books for pupils and teachers. While there are usually class teachers for each grade, many subjects are left with special teachers, and with much gain. The summer vacation is far shorter than with us; hard subjects always come in the morning; school opens at seven in the summer and eight in winter; there is almost no marking; less loss in petty accuracy, reviewing; and less in passing from one class of school to the next higher. Lastly, supervision is more efficient. In Berlin, besides the school board of thirty-one members and the eight

trained inspectors, over two thousand of the best citizens serve as ward committee-men.

At the age of 14, having satisfied the law, another powerful motive to keep on begins to be felt. By doing so two or three years longer every boy can be exempt from two of the three years of military service obligatory for all others. The law specifies for each of the 947 high schools in Prussia at what point in the course this exemption shall be granted. In a gymnasium of the first-class it is reached three years before graduation and without an extra examination. In others it comes one or two years later or at the end of the course, and for still inferior schools an extra examination perhaps or an additional subject or two is required. This standard grades and, of course, greatly stimulates each school.

Again, with each additional year in gymnasium or real school, a new list of official positions in the Government service becomes possible. Each new grade attained qualifies for new and higher posts in the state, bank, railway, postal, telegraph, mining and engineering service. At this point the student may become surveyor, sub-assessor, machinist, department clerk, sub-architect, etc., on passing the state examinations, and many private corporations now follow the government example in exacting educational qualifications for entering their service.

In secondary education the trunk courses tend directly to the University, and there is such unity between the many classes of schools, that no time is lost in passing from one to the other, although technical or industrial schools can be entered at any time. Here, of 230 so-called High Schools in Massachusetts — the only state in the Union that compels the establishment of High Schools — but fifteen sent men to Harvard College in 1888. The High School strives to fit for life rather than for college, often encroaching upon the proper work of the college, as the college too often strives to encroach on the work of the University.

During the last year or two in the gymnasium, the teacher, who has hitherto attended, directed and inspired every step, gradually retires and strives to develop independence and self-direction, to qualify the student for the sudden freedom of the University. The disciplinary stage with its unequalled drill in required work is over, but the multifarious subjects open in the University are not a free lunch. Previous work, the well worn track of academic tradition and precedent, and still more the dreaded state examinations which loom up between the student, and every desired career leave him little choice of studies. No man can preach, practice law or medicine, or enter any high civil offices without a full university training,

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to say nothing of the many industries that now depend directly upon the state of the highest university science. In this country in 1888, out of every 100 students of theology only 23 were college graduates, as were but 18 per cent. of the law students and 8 per cent. of the students of medicine.

From all this we can understand how serious are all changes in the existing standards and courses. I once listened to a prolonged and able expert discussion in the German parliament as to whether a man must study Greek to become an architect. Such much debated questions as how much Roman law should be required of all lawyers, how much comparative religion and historical philosophy for clergymen, how much physics and botany for doctors, should biology be taught on an evolutionary basis, and now at the instigation of the present Emperor, the exciting question whether schools for the people should not be modified in the direction of the recent Swedish reconstruction, laying chief stress on the education of the body and the study of the mother tongue and its literature —these and many such problems are questions of state.

Last of all, the German student must produce a thesis or essay which should always be published, that the student's, the professors', the University's standing, and thus the real value of its degree may be known. It must always contain a contribution, however small, to the sum of human knowledge, but it is the value of research to the student, in both training and in self-respect, that is chiefly sought. Every man of culture, it is held, must once in his life get beyond all authority, books, traditions, custom or habit, and take a free, fresh, independent look at reality. He must cease to be a passive recipient, escape the insidious self-indulgence of knowing merely, and must do, produce something; and act from scientific insight, conviction, independent resolve, critical testing. It is the University's accolade, stand erect; look about you ; be free ; that henceforth, whether conservative or radical, orthodox or skeptical, you may light your own way with independent knowledge.

The medieval University was a corporation of scholars vested with exceptional privileges, exemption from toils, taxes and arrest, save by beadles of the University—who tried its members in its own court. Low rates of board and lodging were often fixed by law or edict. There were frequent riots between town and gown, while liberty of teaching and of conduct was often abused. Universities were hot-beds of revolution which Russia has yet learned no better way than to close. But this freedom was always vindicated and the awful circle of the church or state was drawn about them by papal bull or imperial diploma. The German University is to-day

the freest spot on earth. Some of them still have their own court and prison, and the municipal police can only demand the pass card of a law offending student. The rector is still exempt from prosecution during office, the professors' private property from taxation, and the student from obligation to attend exercises, and the University elects its own member to Legislature and State Synod. Yet more remarkable is the freedom of opinion. "Across the street from the palace of an autocratic and high church emperor principles subversive of the state and of instituted religion have often been taught with impunity." Baur was not only professor but pastor, preaching with power in the established church while promulgating his well-known mythic theory of the gospel and the early church. God and the existence of the external world have been denied and the universe evolved from pure abstract thought, being, the ego, the will or cosmic gas, and a long list of absurdities, ancient, and even contemporary, which I have gathered but forbear to enumerate here, have been advocated with impunity by German professors. Never was such burning and all-sided curiosity. What is matter, mind, the ego, consciousness? How and for what purpose did they all come to be? What are all the forms of knowledge abstractly possible for thought, of existence possible from being? What is life, will, love, freedom, duty, the state, religion *per se?* All the old forms and laws of beliefs men had lived by were upturned and every possibility of thought was explored in quest of new, deeper, more ineluctable foundations. But the most perfect liberty was never more triumphantly vindicated by its fruits than amidst all this ferment. Shallow, bad ideas have died and truth has always attained power. While weak men have passed through a period of confusion and perhaps some have grown indifferent and sterile, strong natures have only struck deeper root.

Thus freed and limbered curiosity turned toward the past, and nature. Literature, scriptural classic and ethnic, languages, new and old, cultured and savage, history in all its departments have been explored by great and devoted men whose names are household words with scholars. The very soil of ancient states has been spaded and sifted, discoveries, great and small, without number, new standpoints and methods have reconstructed as well as vastly enlarged our knowledge of every nation and tongue, hero and institution of the past. So, too, within the memory of men now living chemistry and biology have been almost created and the sphere of mathematics and physics vastly extended. Science has given us a new and indefinitely larger heaven and earth and, (by its method of self-denying special research, each worker is con-

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tent to labor long and in quiet to bring a few well-hewn stones to the temple), stands forth as the greatest achievement of human effort thus far.

Nowhere has the passion to push on to the frontier of human knowledge been so general. Never have so many men stood so close to nature and history or striven with such reverence to think God's thoughts after him exactly. His work, no less holy than His word, is dark only with excess of light. Nature never seemed so inexhaustible a reservoir of force, so complex and yet so simple, so lawful in every part yet so lavishly beneficent to man. To those who wait upon her in the laboratory, museum, on the scientific expedition or with microscope or test tube, psychometer or electrode, she never was so voluble nor her revelations so precious.

The philosophical faculty which is devoted to investigation is the heart of the German Universities. About this and deriving their life and light from it are the professional and technical schools. Not only these, but schools of agriculture must, it is held, be located beside and if possible identified with the University or they will grow both narrow and shallow. In Canada theological colleges are moving into Toronto and federating with the University to share its larger life. In Germany, too, unlike England, all scientific leaders are in the universities, where all who would rise must investigate.

Count now all the learned societies and academies of science in Germany, where the best specialists stimulate each other; the magnificent buildings which, to give due dignity to science, equal and often exceeding in cost and magnificence palaces and legislative halls, the archives and contributions, often several for each leading subject and each with series of volumes, containing solely the results of original research the honors and opportunities of many kinds bestowed on leaders. Compare all this, measured by any standard, with the same thing — I dare not say here, but in any other land — and then study all the ways by which the best of all this material filters down in laboratories, university seminaries for gymnasium teachers, by copiously illustrated lectures and text books, by technical, industrial and military schools of rare excellence, and see what it has brought in military success and supremacy, and is now giving in increasing industrial leadership, and we may see realized *the educational state* which lay half revealed in Fichte's dream, which is ruled downward, from the top, where lasting reforms begin.

This educational awakening in Germany after her greatest humiliation by Napoleon is no more remarkable than the movement in France since the catastrophe of 1870, where the transformations have been by far the most profound and the

most expensive in educational history. To ensure social order within and to be strong without, it was felt that the new democracy must find a new principle of life in education. The lower schools have already been almost totally reconstructed. They have been made free, obligatory and lay; besides ordinary normal schools as in this country, and the *école normale* for the traing of professors, two higher normal schools solely to train teachers in the lower have been created; 13,000 grammar school museums and 2,683 pedagogical libraries, three model professional schools, a magnificent central pedagogic museum with 30 rooms, model laboratories for chemistry and physics with 20 to 30 tables each a chapter of the subject; a very elaborate system of prizes and medals of many kinds for teachers and pupils of all grades, beginning with stipends for children of 12, and including many traveling scholarships to neighboring countries also for both pupils and teachers; increase of pay for teachers for almost every kind of excellence and culminating in 620 fellowship for the best and most mature university students, who are now the centre of 3,700 students of pure science, a class that could hardly be found in France before; a remarkable and novel system of local and general conference, examination, inspection,—these and many more changes are described in this number of the Seminary.

In higher education reconstructions are progressing more slowly, but are hardly less radical. Twenty new chairs in Paris alone; greatly enlarged liberty of provincial faculties; elaborate and costly new buildings; seminaries and laboratories in place of the old public courses; (a movement of university concentration which, as Liard remarks, is the exact opposite of the English movement of university extension, and which has generated an amount of light and heat in the field of higher studies unknown before in France); the strange new student fraternities; the creation of many positions for young men second only to the titular professors and a great spur to them; the unification of faculties in the same city; and above all, perhaps, new institutions like the École pratique des Hautes Études, the new Conseil Superieur, the École Libre des Sciences Politiques, the Musée Guimet, and many new publications show a movement, the final results of which it will take a generation or more to tell, but already so promising that as France showed her true greatness after the war by learning of her conqueror, so now Germany is in turn learning of France. Within the last few years both general and local governments in Germany, as well as industrial corporations and societies of various sorts, have sent representatives to study and report on various phases of this great educational instauration in France. First, it was said in France that it

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was not the schoolmaster who made the soldier, but the German University that made the schoolmaster which conquered at Sedan. Now the arts of peace are rapidly adding an additional sanction and motive to higher education hitherto unknown.

In Italy a council of education, composed of sixteen royal appointees and sixteen professors selected from the universities, has grappled with the problem of subordinating fourteen of its universities to the other seven, which latter are being rebuilt with great and sometimes literally palatial magnificence. As, with the policy of doubling for each provincial university all the funds it can raise for itself, the government has gradually acquired practical control of most of them, scholarly and scientific activity has been awakened to new life in nearly all directions, and ambitions of intellectual leadership, as in the best days of the mediæval universities of Italy, are often manifest.

Holland has revised and co-ordinated her organizations of higher education, and established one new university. Sweden has profoundly reconstructed her educational system on a plan that might be called the most severely modern in the world, expelling not only Greek but even Latin from intermediate schools and gymnasia and relegating both to the university, beside Hebrew and Sanscrit, and Denmark is taking steps in the same direction. In 1884, Russia, after prolonged discussion, re-organized her universities. In Great Britain, new provincial universities, and important changes in the others, too many and great to be briefly described here, have been inaugurated. In Germany, thirteen magnificent university buildings make Strassburg, in all departments, the best of all architectural embodiments of the German university ideal, as the new Sorbonne, medical school, and the new Lycée Janson de Sailly are of the French. Halle and Kiel have been, and Breslau is now being, almost entirely rebuilt. New and often magnificent laboratories, libraries, special cliniques and museums at every seat of learning,—great temples of science, as they were called by one of its perfervid orators, Du Bois-Reymond,—and two single buildings costing four million dollars each, show where much of the French indemnity money has gone; and what is far more important, the internal has not lagged behind the external growth. At Budapesth, Ghent, Aix-la-Chapelle, Helsingfors in Finland, and even in remote Athens, magnificent new structures show in what esteem science is now held, and what still greater things she is yet expected to do. Several institutions of new pattern, like the Naples School of Zoölogy, which now trains the best professors for Germany; the London University, which

is solely an examining body, and does not teach; the remarkable University of Tokio, the centre and instrument of most of the remarkable transformations in that country,—these and many more show not only how many and strong, but how differentiated, institutions have become in the field of higher education. The great advancements made and impending in medical, legal and religious education, the new relations now evolving in our own and other lands between the government and science. New universities and promising new movements in the old ones, new school systems and dissatisfaction with the old ones in every civilized land, already mark the present as a period of unparalleled possibility and promise in which we believe our own country is not to be permanently left behind. The advances lately made in the Argentine Republic, Chili and several other South American States, in Australia, New Zealand and some other English colonies, and a few of our own state and city systems and private institutions are remarkable, full of promise, and will be described later.

The one momentous lesson from all these varied fields for us is that the one source of vitality in an educational system is *at the top and not the bottom*. We need not adopt the centralized government control of education, the method I believe of every other country in the world to-day save our own. These systems have their defects and even their dangers. To seek to engraft the best of them bodily or eclectically into our American life, as Japan has done into hers, would be now as impracticable as to enforce the latest and most economic methods of scientific agriculture on the rich prairies of Manitoba. Yet we should not forget that in all its best features there is nothing exclusively German, French, English, or Swedish about it. It is a means to an end, and if properly handled would work as well here as so many of our American business forms and inventions have worked when adopted in foreign countries. [But we must develop a national patriotic standpoint, above the rivalry of higher institutions and the partitions which here so isolate educational grades from each other. We must begin the long process of training future educational leaders who shall know, feel and respond to the stimulus of the best throughout the world, who are interested and informed on all stages of education and regard their own institutions as a means to a far larger national if not universal philanthropic end.] The exaltation or degradation of the pulpit, bar, and of medical sciences, and now of increasing industrial processes, and even international competitions, great projects and government works, etc., depend upon the efficiency of universities as never before. But nothing depends more

immediately or absolutely upon them than colleges and lower schools. Hence it is that while to conserve knowledge is indispensable, and to diffuse it is noble, to increase it is life itself, without which all parts of the educational system grow mechanical, formal and sterile. Jefferson made the cause of the university an holy cause. The orient, the middle ages and our fathers in this country began with higher institutions and built downward. To plan this extension of knowledge to mere juvenile rudiments is the work of a master, and in any other hands elementation and methods are enemies of learning, so sterilizing, so antiseptic to any future contagion of knowledge that it is impossible to overestimate the terrible mental and even moral mutilation they may inflict. If unschooled native talent is not indeed more abundant here, American life is a better school for it than European life, and it finds here larger and quicker careers. Thus if instituted education finds it harder to compete with life, the task of preparing for it is also harder. Yet the apex of our educational system should not longer be in Germany, where scores of our best graduates still go yearly, and to whom so many of our best advances have been due. If education is left to regulate itself, as Tolstoi would have it, it would in the end no doubt result in schools for those who chose, as marvellously adapted to every environment of race, climate, trade, faith, as various and as saturated in each case with local color as those Mr. Leitner describes in the Panjab, so dear to the people that even the English government, after decades of effort, could not supplant them, and the story of which is so full of a strong fascination. Of all schools in history, such seem to best stand for the naive unconscious instincts of the Volk-soul,—conservative only and utterly unprogressive. The impulse we plead for has its exactly opposite source where consciousness and science are at their clearest and best. By free but not enforced or concerted specialization among higher institutions, which will bring to each of them all the wholesome stimulus felt by staid professors when the elective system began; by mored evotion to pure science; by a larger application of the economy of concentration, and above all by more research and love of truth for its own sake, we believe without a shadow of doubt or fear, that new wellsprings are about to be opened in this country, and new and quickening influences to flow downward till the lowest is enriched.

EDITOR.

THE NEW GERMAN SCHOOL.[1]

On the 1st of March, 1889, Deputy von Schenckendorff presented to the Prussian Diet a petition signed by nearly 23,000 educators and others, praying for a reform of the *Gymnasien*. About the same time two *Schulreformvereine* were formed at Berlin. Dr. Lange and General Secretary Peters are at the head of one of them; Prof. Preyer and Dr. Hugo Göring are at the head of the other. Among the reforms advocated by the latter—*Der allgemeine Deutsche Verein für Schulreform*—are better school hygiene, better preparation of teachers, simplification of examinations, a greater sharing on the part of parents in the work of education, the placing of *Realschulen* and *Gymnasien* on the same footing, and the making of the mother-tongue the center of instruction. This Verein has for its organ *Die Neue Deutsche Schule*. The *Tendenz* of the new movement may be seen more fully from the views of Dr. Göring, the editor of this periodical. He objects to the German higher schools of to-day, because they educate the intellect at the cost of the heart, the will, the body. They do not fit for life. They are not German. "The new German school" should be a *Lebens-schule*—a place where pupils prepare for life by living. The Herbart-Ziller-Stoy school, in the opinion of the editor, over-estimate the value of working over ideas as a means of cultivating the moral powers. In opposition to them he maintains the doctrine, "which is proved by the daily facts of life, and was strongly supported by Comenius, Saltzmann, Pestalozzi, and especially by Froebel," that the practical will of the child must be daily exercised.

Dr. Göring's plan is briefly as follows: [The following résumé is in substance that given by Herr Unger in II., 1 Heft of *Die Neue Deutsche Schule*. Dr. Göring approves this in a foot note.]

At first the school is to be a private institution for families of the higher class. It must be situated in a beautiful and

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[1] *Stand und Ziele der Schulreform-Bewegung*, Rede in der konstituierenden Versammlung des Allgemeinen Deutschen Vereins für Schulreform, "Die Neue Deutsche Schule," gehalten am 15 April, 1889, in Berlin von W. PREYER. Berlin, 1889.

Die Neue Deutsche Schule. Monatsschrift für Begründung einer dem Zeitbedürfniss entsprechenden Jugendbildung. Hersg. von DR HUGO GÖRING. II., 1—8, Hefte. Hamburg, 1890.

Armee-Verordnungs-Blatt. Berlin den 14 Februar, 1890. Nr. 6.

Aufnahme-Bestimmungen und Lehrplan des Königlichen Cadettencorps. Berlin, 1890.

healthy region in the country, where there is plenty of room for play-grounds, gardens and fields. There will be three grades of the school; the first is the school of general preparation for practical life, and is for the years from six to fourteen; the second, continuing the instruction from the age of fourteen to sixteen, embraces the preparation for the military schools, for the technical trades, and for business; the third grade, for the years from sixteen to twenty, prepares for the university and the polytechnic, and seeks to give the future students of all the faculties a preparation in language, mathematics and natural sciences.

The programme for the school is as follows: The theoretical instruction is given only in the forenoon. It begins with one hour daily, and increases gradually to three, in the second grade to four, and in the third to five hours. So-called home exercises are done away with. Essays, translations and other written tasks are prepared in the class. The teachers do not discipline the pupils, but in case of misdemeanor, the pupil receives a report of censure which he must present to his parents. Promotion to a higher class is determined, not by examination but by the estimate of the pupil's work for a half year. Public examinations are excluded as being thoroughly deceptive. On the other hand, it is desired that parents be frequent guests in the institution. Within the school a regular and accurate report is made by every teacher in regard to each one of his pupils. Over-pressure is prevented by suitable division of mental and physical work. The whole afternoon is devoted to the latter. It is filled with military exercises, gymnastics, sports, gardening, manual training, swimming, skating, and the like. Frequent excursions are made; thus the pupils get practice in surveying, and are introduced to Zoölogy, Botany, Mineralogy, and Geology. In connection with the instruction in Physics, Chemistry, Technology, and Geography, they visit factories, docks, iron-works, commercial houses, railways, storehouses, telegraph offices, post-offices, and the like. In the two upper grades, journeys to large cities and to foreign lands are made, to arouse an interest in language, commerce, geography and history. School-festivals with addresses, declamations, dramatic representations, and musical recitals, are celebrated on the birthday of the emperor and on other anniversaries. Vacations as a rule do not occur. In their place are longer excursions and journeys. Special stress is placed upon the cultivation of the religious sentiments, and of a national German spirit.

In the lowest grade—that devoted to the necessary preparation for practical life—the children are chiefly occu-

pied at first in the garden, on the land, and in the school workshops. Reading, writing, and arithmetic do not begin until the second year. In the whole of the lowest grade instruction in natural science and natural history forms the foundation. To this is added geography, mathematics, and the history of Germany since the Reformation, especially that of the most recent times. But reading, speaking, and writing of the mother tongue form the center of the whole instruction. Only those pupils who are to enter the higher grades receive instruction in English and later in French. On the other hand all take drawing and singing; and those who have musical talent learn to play some instrument. The second grade —for boys from the ages of 14 to 16—embraces the preparation for the military school, the technical trades, etc. This introduces the pupil to the interesting world of commerce, teaches him the branches of trade, book-keeping, and the like, the German, French and English languages, the elements of political economy, law, and the technology of chemistry and physics. The sciences begun in the lowest grade advance with the age of the pupil. The aim of the instruction in natural science is to develop clear ideas of the life of plants and animals, and to present the elements of mineralogy, geology, chemistry, and physics. Those pupils who intend to enter business receive instruction as they need in Spanish, Italian, and stenography. Only after the pupil has in this way worked through and lived through as it were, the conditions of peasant, artisan, and man of business, will the third grade prepare him for the higher callings. Then he receives his first introduction to antiquity; but he receives it not by the study of the ancient languages, but by means of instruction given in German, and by reading important works of antiquity in good German translations. The theologians and philologists alone receive instruction for four years in Greek and for three years in Latin. Modern languages and literature receive special attention. Italian as an elective, takes the place of Latin in the last two years. Mathematics ends with quadratic equations. Special attention is devoted to the most recent German history, especially to the history of art and of literature. Pupils are instructed in science by the works of such writers as Du Bois-Reymond, Henle, Czermack and Preyer. At the conclusion of the whole school-course the pupils are given as clear an insight as possible into the character, aim, advantages, disadvantages, and the economic and social position of the different callings in life.

Dr. Göring does not think that his plan could be immediately adopted in the public schools. A private institution must first furnish new men and prepare the

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way. If the plan is to be adopted by the state, the necessary preliminary stage is the unadulterated Froebel kindergarten. In a state-institution the work in the different grades would be essentially the same as in the private school. But the pupils would spend three hours in the middle of the day at home. Many of the physical exercises, the agriculture, care of animals, and the like, recommended for the private institution, would have to be omitted in the public schools; but a school-garden would be necessary, and parents who could afford it should supplement the work of the school by preparing a private garden for their children. As a state institution "The New German School," in Dr. Göring's opinion, would form a most important factor in social reform. It would educate pupils to find enjoyment in the humblest kind of work, it would show them life in its many forms, and it would lead them through the natural process of development corresponding to the culture of mankind. By showing the historical development of our present state-life and by raising every kind of labor to its proper dignity it would take away from social democracy its very foundation.

All this would be of less importance if it were merely a theory. Hitherto the *Neue Deutsche Schule* has existed merely on paper; but there is a prospect of the experiment's being tried. A German lady has given 50,000 *Marks* toward the establishment of the school; and it is hoped that some one may soon give land and a building. Among those whom Dr. Göring mentions as having shown their interest in the new movement (some of them probably by decided disapproval) are the Baroness von Marenholtz-Bülow, Prof. Rein of Jena, Scheller and Pickel of Eisenach, Dr. Bach of the Falk-Realgymnasium in Berlin, Dr. Oskar Jäger of Cologne, Preyer, Haeckel, Kuno Fisher, Höffding. Kehrbach, Krafft-Ebing, Paul Güssfeldt, and other distinguished educators. His plan has been published recently in book form. (*Die Neue Deutsche Schule. Ein Weg zur Verwirklichung vaterländischer Erziehung. Leipzic, R. Voigtländer.* 1890.) And the *Cultusminister*, Dr. von Gossler, has permitted the book to be dedicated to him.

The hopes of the reformers centre especially, however, in Emperor William II. Paul Güssfeldt's *brochure* reviewed below is supposed to reflect his views. The Emperor was personally interested in the *Enquête-Kommission* of some forty educators who met on the 4th of Dec., 1890, to consider educational problems. He made a vigorous speech condemning the present system of classical instruction and charging it with over-pressure and serious injury to eyesight; and he insisted that German language, history, and literature,

should be made the centre of instruction. What the Emperor will be able to accomplish nobody knows. Different educators take different views of his pedagogical aspirations. Some shrug their shoulders and say that reforms are not accomplished by educational conventions. Others, especially the members of the Verein just mentioned, congratulate themselves upon having the Emperor as an ally. What he actually has done is to change the course of study prescribed for the Royal Cadet-corps. In a special order of the 13th of last February he recommends a change of the course in the following respects:

1. "The end and aim of all education, especially of military education, is the formation of character, resting on the harmonious co-operation of physical, scientific, religio-ethical education and discipline. No side of education should be made prominent at the cost of others. But at present the scientific programme of the Cadet-corps, according to my observations, makes too extensive demands upon a large number of pupils. The course must be simplified by the exclusion of every unessential detail, especially by thoroughly sifting the memory material, so that even the less gifted pupils may be able, with suitable diligence, to follow the instruction without over-pressure, and to complete the entire course in the prescribed time. What the instruction loses in extent by this means it will gain in thoroughness. The teachers in all branches and in all grades will immediately have to adjust their methods in this respect.

2. "In every simplification, however, the instruction must be made still more practical, so that the cadets not only may gain the knowledge and skill immediately necessary for the military calling, but also may obtain a mental equipment which shall render them capable themselves to exert in the future a moral and instructive influence in the army, the great school of the nation, or in case they should later enter another than the military calling to fill their place there also.

"In religious instruction the ethical side must be made prominent, and chief stress laid upon educating the pupils in the joy of faith and the fear of God, to strictness toward themselves, to patience toward others, and upon establishing them in the conviction that the practice of fidelity and devotion to ruler and fatherland, as well as the fulfillment of all duties, rests upon divine commands.

"The instruction in history, more than hitherto, must give a knowledge of the present, and especially the position of our fatherland in it. Accordingly, German history must be more strongly emphasized, especially that of modern and most recent times; but ancient and mediæval history must be taught, chiefly in such a manner that the pupils shall be

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impressed by examples of heroism and historical greatness, even from those epochs, and also obtain an idea of the roots and development of our culture.

"Geography, political as well as physical, while beginning in the lowest grades with the home must first of all supplement and support the historical instruction in the different grades. The further end of geographical instruction is to bind the pupil most intimately with his fatherland, but also to teach him to understand and value foreign lands.

"German becomes the centre of the entire instruction. In every subject the pupil must be instructed in the free use of his mother tongue. Even in the hours devoted to German, as well as in the instruction in literature, in the choice of the pieces for reading, in lectures and essays, special consideration must be given not only to classical antiquity, its legends and culture, but also to German legends and the literature of the fatherland; and the pupil should also be made acquainted with the mental life of other important civilized nations of the present, by an introduction to separate master-pieces of their literature.

"In the instruction in modern foreign languages, the stimulation and instruction of the cadets in the practical use of the languages, should be kept in view from the first grades."

The programme of the Cadet corps, as revised according to this order, lays special stress upon modern languages and modern history. Of the twenty hours devoted to history during the *Gymnasium* course, sixteen are devoted to modern history since 1415 (Geography is taught with the history in Prima and Ober-Prima), and only two hours to ancient and two to mediæval history. Of the 136 hours devoted to languages, 50 are for Latin, 21 for English, 37 for French and 28 for German. Much instructions in the mother tongue is given also, of course, in the other branches. 15 hours are devoted to Geography, and the remaining 117 hours are divided among the following subjects—Religion, Mathematics, Natural History, Physics, Chemistry, Drawing and Writing.

This order is deemed especially important because in it the Emperor has shown his hand. It contains his freely expressed opinion. The reformers see in it the beginning of the end; and maintain that while the change is intended first for the *Cadetenanstalten*, the Emperor's purpose is to extend it to the other schools. By a simple order the Emperor can change the programme of the Cadet-corps; but time and indirect methods are demanded to effect any great change in the public schools. Dr. Göring appeals to the Emperor as "the born protector of the 'New German School.' "*Der Hohenzoller wird den Muth und die Kraft haben, das durchzusetzen was noth thut: eine neue deutsche Schule!*"

WILLIAM H. BURNHAM.

RECENT LITERATURE OF HIGHER EDUCATION.

I.—FRANCE.

Universités et Facultés. LOUIS LIARD. Paris, 1890. pp. 262.

Higher education in France was in a very bad way before the war of 1870. Not science but professional training was the end of all. There was no place for research; faculties were isolated even from each other in the same town. There was no co-operation, and no exchange of views. They met once a year in long robes and were jealous of precedent. The triumph of individualism was complete. The Empire used universities to make public sentiment for its ends; but the contrast of this with other branches of public service was painful. Changes were made with no new orientations. At Lyon the faculty of letters was housed in an old palace; at Bordeaux, in a part of the City Hall; at Toulouse, in an old convent. Only the faculties of law and medicine had real students; while those of letters, and worse yet of science, wasted labor, diplomacy and talent to develop a transient, unknown and fair weather audience of hearers for everything under heaven, who sometimes left to follow a band on the street. Knowledge was broken into small coin; its schools were bundles of doctrines. Everywhere the university spirit was decayed, and the duty and religion of high studies was extinguished.

Before 1870, however, the *Ecole Pratique*, which has wrought a revolution, had been organized in five sections. It gave real pupils, investigators, fellowships, apprentices, expeditions, freedom from the procrustean programs, scientific publications, and union and association. After the war, which checked this young growth, Renan declared that it was not the German schoolmaster but the German universities that had conquered France; for while the school makes the soldiers, the university makes the school. As a result of the law of 1875, ninety-nine millions of francs were pledged, of which the cities gave fifty-one millions, the state forty-seven, and the departments the rest. Perhaps the desire to unite the hitherto isolated faculties, each with its own independent history, traditions and tendencies, led to the policy of bringing them under one roof, as in the magnificent new Sorbonne, instead of the German way,—many pavilions and a small university city of buildings. To retrieve the degradation of having to earn its own expenses in 1838 the faculties received five million francs from the government in 1877, and over eleven

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million in 1889 (primary schools costing 100 and secondary cost 18 million francs). In 1889, the ten Prussian universities nearly twelve million francs. Outside Paris, but five of the fourteen provincial universities have all four faculties. Twenty new departments have been added in Paris. These are as follows: Administration, constitution, pandects, finance, children's diseases, clinical ophthalmology, syphilis and skin, nervous, mental disease, organic chemistry, physiological chemistry, literature and language of North Europe, history of philosophy, history of the middle ages, contemporary history, archeology, French language and literature, sanscrit and comparative grammar, the middle ages, science of education. Germany now has 12,000 students, or one to about 500 of its population. France has one to 2000 inhabitants.

Inside the university all is changed. Instead of abolishing degrees and placing the state examinations in their place, the "canalization of science" by programs was set aside, and the policy of developing savants as well as practical lawyers and doctors was adopted. Instead of effacing differences the policy was to inspire all with one common thought and thus to unite the faculties at the top of their endeavors. They could not suppress public courses at once, so deeply French were they felt to be, but the private esoteric courses, so ridiculed and denounced as cloistral at once became very popular, and all the younger instructors rushed into them. Two hundred and twenty-eight conferences have been established. Teachers prepare for the license and the new aggregations, or competitive examinations for professorship in the Lycee. Of 3700 of these students of pure science and letters, 620 receive stipends from the State, which before aided chiefly the Lycees. This is the highest ideal of every civilized nation, and in France it is the exact opposite of University extension. It is University contraction. Before, all who went beyond the Lycee went to the special schools, save the few who were ambitious of professorship who went to the École Normal. Now the École Pratique does this work also. Graduation is not the end, and the lost quality of long and patient work is restored. Formerly the provincial faculties had to send their programs to Paris in advance, where they were revised and returned marked *ne varietur*. But the traditions of concentration of all at Paris have been reversed. Faculties have acquired liberty and with it responsibility. They have their own credit, and administer all the funds they do not spend, and can accept legacies and gifts, so that local rivalries have sprung up. Besides the titular professors for life, are the chargés de course and the maîtres de conférence. The two latter take part in the faculty assembly, which considers

science and education, but not in the faculty council, which is administrative. The old university, the indivisible image of the State, legally ceased to exist in 1850, but still lives in popular love and tradition. In 1883, all faculties were asked if the faculties could be constituted into universities as in other countries. Although most replied yes, it is felt that time and not legislation must gradually knit the faculties together. The new local senate combines them to unfold common interests. Where the spirit of science is strong this fusion wrought by the just recipriocity of service and sacrifice grows rapidly, and where it is weak this progress university-ward is slow. The union of master with master, and of students with each other, throughout France, as well as the closer union of student and master in the common work of research is the watchword. Student fraternities unknown before reinforce this hope, for they are now-based, not on province, religion, politics, class, but on science and patriotism, and are open to all.

The future will grow from this common consciousness. Science is one and gives unity, and on its natural classification the university must spring by epigenesis. What happens in one field must not be lost upon others. Thus, only science can heal our wounds. In a republic where so many thousands of our future leaders are now students, the university, which is the form higher education always takes, should now be our central patriotic ideal, utopia, and in it democracy must seek a new principle of life. The locality, where provincialism is so weak as in France, must be developed to be a local placenta, each for its own institution. France still lacks the philosophical faculty, the heart of the German University. Its lycee students are not preparing for the University as are those in the German gymnasium, but for the professional school. The competition of pure science with these is terrible, but the former is steadily gaining. Every instructor in the Lycée should study at the University as in Germany. Surperfluous institutions cannot be transferred to other places, as Berthelot advocated. They cannot be massed into groups as Waddington suggested, but they may be organized on different plans with different degrees of completeness in the number of courses.

L'Université Idéale. E. L. HALLBERG. Rev. Internat. de l'Enseignement. July, 1890.

In view of M. Liard's book the maximum of reforms that should be recommended to legislatures are as follows: The rector of the provincial university should be at the same time the head of the primary and secondary schools. He

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should be the constitutional director of all their methods subject only to councils; one general university council to replace the present academic councils, and charged with finances, appointments, and under this three special councils, one for each grade of education. At present secondary education has no council. The entire fund for the year should be turned over by the state for the rector and councils to apportion at discretion among the three members of the required university, viz., the primary school, the Lycees, and special schools or the academy. The rector should be appointed by the chief of the state, on nomination of the minister of education, and his salary at the end of the five years of service, before renewal is necessary, should be 25,000 francs. Above the rector should stand only the president of the general council, and next below him should come three vice-rectors, who should act as inspectors, one or more for each grade. Each faculty should have a dean annually chosen by lot. The most shocking reform, from a French standpoint, is the total separation, in distinct buildings if possible, but at least each under its own director and independent of the other, of the internat or the boarding and rooming part of the Lycees and special secondary schools, from the educational part. Highest in the former should reside students advanced enough to act as maîtres d'études, and next above them, but lowest in the latter, should be the repetiteurs, who should supplement and conduct reviews for the professor. In common school or primary grades, teachers should be prepared by the inspectors, appointed by the rector, but with the approval of the prefect. The budget must be made up by joint action of all the councils, but independent endowment of the universities is the desideratum.

The juncture between the three orders of education must be as close and complete as between successive classes in each. About the worst evil in education is the indifference and ignorance, real or affected, on the part of both teachers and students in each order of education of orders below their own:—of the college of the high school, and of the high school of the grammar school, etc. These must penetrate each other and be an unity.

Le Conseil Supérieur de l'Instruction Publique.

The decree of March 1808, which organized the University of France, placed it under a grand master and a university council of thirty members, organized into five sections. The university, a term synonymous in France with the entire system of public education, was nominally autonomous and independent. The universities of the middle ages were repub-

lics of scholars within monarchies; but this was a machine to fashion youth to the will of Napoleon. In 1815, in 1824, when the ministry of public instruction was appointed and in 1845, the constitution, name, number or function of this council was changed. The declaration of the rights of man in 1789 did not include the right to teach or be taught, and the liberty of instruction was much discussed between 1847 and 1852. At one time the chief function of the council seemed to be to prepare work for the ministers. At one time it must be consulted, not only concerning all text and other books for use in all schools, but concerning all new chairs, faculties, buildings, etc., and might be consulted concerning all the laws and decrees the government was preparing, and the government might ask its advice without following it. To some it seemed to consolidate and aggrandize the university, and to others to make it a hierarchy; and by one decree it was made chiefly consultative, formal and subservient to the minister, and by another an active instrument of reform. In 1873 still another council was constituted which the framer of the law conceived to be an assembly of the entire French family, the peculiar organ of the moral life of the nation, representing its great social interests.

The significant law of February, 1880, created the present council which consists of 62 members, nine of whom are permanent and appointed by the President of the republic, and the rest serve for four years and are elected from the College of France, the museum, catholic and protestant faculties, faculties of law, medicine, science and letters, the school of charts, of living oriental languages, the polytechnic school, the beaux-arts, the arts et métiers, the école centrale, the agrommic institute, the lycées, provincial colleges, primary and private education. The functions of this body include the consideration of all new creations whether of faculties, institutions or chairs, all text and reference books offered for introduction to school uses, programmes, methods, examinations, discipline, the adjudication of all questions that come up to it from lower educational bodies. The council meets twice a year, but the ministers of education can convene extra sessions. Regular meetings are held in July and December and usually last a week. One half constitutes a quorum. The meetings are private but their decisions are printed in the Journal Général and in the Bulletin Administratif. Special committees are appointed for special purposes by the minister who presides. Members wishing to serve on a committee announce their wish, and, as a rule, any member may take part in the deliberation of any committee.

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Committees of outside experts may be constituted for special purposes.

Under the Republic the state is *we*, and what was once the education of a prince is now the education of our masters, the people. Great men have worked in the council successively for twenty years, and also side by side impersonally for one purpose and on one plan. There was no "electoral fever" either in 1884 or 1888 in selecting new members of the council but only a salutary agitation. There have been no abrupt changes or reactions, and even the judicial functions in matters of discipline and contention have worked smoothly. Its history is the complete history of education in France for the past ten years, and it has been a point of living unity between the faculties and grades. The amount of work accomplished is surprising. In superior education it has created the conseil général which unites the faculties of the same city, adopted a policy of gradually developing real universities, revised and often transformed all degrees and examinations, provided for legacies and donations, etc. In secondary education the chief work of the council has been the renovation of the plan of studies, and particularly that of the secondary special schools of M. Duray. In primary education everything has been reconstructed part by part.

II.—GERMANY.

Manuale Professorum Göttingensium, Zweite Ausgabe. GÖTTINGEN, 1887. pp. 128.

This is an official collection of the statutes of the university since its charter in 1736 which are now in force, and is printed only for the private use of the full professors of that institution. It gives an inside view of the organization of the university which is full of interest, and is the only instance of its kind known to the writer, such statutes being usually published separately and a collection covering all departments of the university being hard to complete. It begins with a charter or diploma of privileges in twenty-seven articles. First, all professors have "full and unlimited freedom forever" to lecture publicly and privately, hold disputations, to express judgments and objections to the faculty, to bestow and invest with the four degrees of doctor, licentiate, master, baccalaureate. They are especially accorded independent jurisdiction omnimode. Save in very special cases the prorector is exempt from legal prosecution during office. The ordinary professors of all faculties constitute the senate which shall have charge of the general welfare of the university, execute statutes, rights, privileges and immunities, as well as needed

reforms. The university may administer a wine and beer cellar with university funds. On the death of a professor his widow or heir receives one-fourth of his regular salary as "de servitum" and another *gnaden*-fourth, like other civil servants. The rank of professors is equal to that of a royal counsellor, and on public occasions they shall have precedence of the local mayor or burgermeister and other city or town officers. No professor of one faculty shall lecture in the field of another, save that any one in the three other faculties may lecture in the field of the philosophical faculty, and jurists may teach in the field of church history.

Then follow the regulations for celebrating the emperor's birthday the exercises of which must consist of an oration by a member of the academic senate, and music, the expenses to be borne by the university. The regulations for electing a member to the Prussian house of lords (Herrenhaus), in which each Prussian university must be represented by a professor, follow. A member of the theological and another of the law faculty must be chosen to attend the synod of the state church which meets at least once in six years. The pro-rector is ex-officio a member of the provincial assembly.

Some of the fees are as follows: first matriculation, $4.50, if from another university $3.00, of which one-fourth goes to the pro-rector, and the rest is divided between the philosophical faculty, the general treasury, the poor-box, the library and the professorial orphan house. Small but stated fees are charged for pass-cards, testimonials of conduct and ability, books with professor's certificate of attendance, etc. The fees for promotion, habilitation, and nostrification, generally nearly $100, are distributed into nine parts, the largest of which, nearly three-fourths, is divided equally among the the members of the faculty giving the degree. Copies of testimonials, leave of absence, fees per diem for imprisonment, taxes in case of death of a member of the university, a fee for heating the hall where promotions are held, are all presented and all together help to account for the elaborate and expensive system of bookkeeping in use in German universities.

The university library is an independent institution, the librarian being appointed by the crown, the custodians by the cultus minister, and the assistants by the curator. Graduate students may be received as library apprentices, and students may obtain special library privileges by becoming amanuenses to the librarian. There must be two catalogues; 1, a "real" catalogue, where the number of the catalogue page is also the shelf number; 2, alphabet catalogue; manuscripts, music, school programs, dissertations have separate catalogues. The "manual" contains current titles of acquisitions for the

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year with prices, etc. Great pains is taken with exchanges, and exchange lists and accounts are kept with great care mostly during the summer. Gifts of above $750 cannot be received by the library till the minister is satisfied that the requisition conforms to the needs and order of the library. Each instructor writes in a book the name of any book he desires, and the librarian writes after it whether it is ordered or if not why not. The binder can retain books but three weeks, as an inventory of all furniture, etc., and a minute report of one fifteenth of the books in the library is made each year. The library is not open after 3 p. m. For the use of the library minute directions are given. Students require special permission in order to visit the periodical room. Here current numbers are exposed two weeks and can never be taken out. The salient features of these many pages of detailed regulations are that the student is more restricted and the professor more privileged in the use of the library than is common with us. Works of mere entertainment are not loaned to students, but any inhabitant of the town properly vouched for may have free use of the library. The library is under control of a commission composed of the officers of the library and of one professor of law, one of theology, one of medicine, two from the philosophical faculty, one to represent philology and history, and one to represent science and mathematics, each elected for five years. The function of the board is to "influence the organization and growth of the library" and to "establish close and lasting relations between the body of instructors and the library." The librarian's annual report to the curator passes through their hands.

Rules for the use of the botanical gardens, and the university bathing establishment follow. The election of the pro-rector, who in Göttingen is rector, involves a general and later a special vote to select one from the several candidates receiving most votes. These statutes are very minute and provide for all possible contingencies. How the first list of candidates shall be made out, the valid grounds on which the office may be declined, the way in which the journal shall be kept, doubtful cases where lot is to be invoked, the ultimate disposition of old ballots, (by burning) are all provided for. The long oath and duties of the pro-rector follow. Since 1887, he must present an annual chronicle to the ministry, as has long been the custom in Kiel and Halle. Since 1848, much of the business of the senate has been done by two committees each consisting of the rector, his predecessor (who has many functions) the two university counsellors and five professors elected every six months and representing the

different faculties. The first of these is an ethical board or committee, (Rechtspflege-Auschuss) and has charge of matters of discipline, the university prison, removals, and the state of morals generally with a report to its prorector each semester. The other body is administrative (Verwaltungs-Ausschuss) and cares for the funds of the university, and all expenditures not current and controlled by the rector, and not derived from the state and under the care of the curator. They look after the obligations of the extraordinary professors, questors and subordinate officers. They give admonitions, try to obviate misunderstandings by their intermediation and promote the greatest collegiality and dignity in the faculty. The remisson of fees, the state of the buildings, exceptional meetings of students and filling of vacancies also fall to their charge.

Several pages of parliamentary rules for the weekly meetings of the senate are given. Notification of meetings must be a missive containing the topics for discussion and their order, the receipt of which each member must acknowledge in writing. If he must be absent he must excuse himself, and only if he does so and is so entered in the minutes can he be informed of what is done in the meeting. Absent members are bound by the action of those present. Members arriving late cannot be informed of the previous action of the meeting. Speakers must never exceed five minutes and must always address the chair. The journal contains only the questions voted on etc.

Professors must do their utmost to promote the interest of the university. With all their power they must strive to promote peace, harmony, and concord, must avoid all detraction in public or private, must be jealous of the honor of the university, their own faculty and of themselves, etc. Their oath of office pledges them to this, and to fealty to the king and constitution, This oath must be construed to cover all duties, so that in acting e. g., as secretary of any university body no special oath is required. By a curatorial rescript of March 1878, theological professors are pledged to lecture "clearly and fundamentally" in accordance with the doctrines of the Lutheran church. Lecture announcements must be handed in at a fixed time or a summary visit from the beadle follows. Term of absence may be for three days only in urgent cases, but must be announced. For absence of from three days to four weeks professors must obtain leave of the curator, and if for longer of the cultus-minister. If absence is for more than six weeks in term time, royal permission must be obtained. For six weeks absence pay is not stinted ; to four and one-half months the salary is reduced to

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half and for longer absence ceases altogether unless in case of sickness.

The laws of student dicipline, although revised in 1879 are better known because accessible to all students. and need not be described here. The functions of the syndicus or judge are carefully defined. He can compel attendance and testimony by a punishment of 24 hours imprisonment. The severest of the seven penalties is exclusion from all university study, involving of course exclusion from all careers to which such study opens the way. Then come laws for student societies and meetings, for practice and instruction in fencing and the use of the rooms provided for this purpose, for the university hospital, for prizes given by the crown, and then the series of special statutes for special funds given by various persons for the aid of students, for stipends and free tables and rooms. These funds are numerous but comparatively few have attained the dignity of having a separate series of statutes. The questor's or treasurer's rules occupy 12 pages, then follows the widow and orphan fund which is administered by a special board, and is supported by the profits of the university drug store, by an annual members' fee of 12 dollars and membership of which is no longer compulsory. The volume closes with a definition of the duties of the curator and the beadle.

University statutes in Germany are usually not edited or bound together, and many of them, especially those regulating the professors and rectors and are difficult to obtain. It would probably be impossible to get within two covers and in this space so good a picture of the constitution and working of a typical Prussian university as is here presented. Dr. Althoff the chief expert of the Cultus university lately advised an American student of German universities to take this manual and spend a month at Göttingen, studying it thoroughly and he would get the best insight possible in a limited time, into the Prussian system of higher education.

Die Mängel deutscher Universität-Einrichtungen und ihre Besserung. PROFESSOR C. HALLE. University of Breslau, 1887. pp. 34.

No one should lightly touch the Universities, which are the jewels of the German nations. Neither theology nor the State nor politics must ever be suffered to restrict in the least degree the freedom of teaching which is the heart of the Universities themselves. The right of appointing and promoting instructors should be as impartial as is the nomination of judges. This indicates one present danger. Another is that docents are tempted to specialize, too narrowly, and too early.

Again, if professors may be pensioned at the age of sixty-five they should still be allowed to lecture and receive all the lecture fees. There is far too much irregularity and laxity about beginning and ending the University term-work, and a deplorable tendency to cut the year short at both ends is growing. Term time should be prolonged instead of shortened. Again, the value of the doctor's degree is in danger of being lowered by several causes, prominent among which is failure to insist that every thesis be printed that it may be accessible to public criticism. It should also be printed as vouched for by one proper responsible professor. Medical doctors should not be permitted to hold the title till they have passed the State examination. The doctor's degree is practically, if we except the theological licentiateship, the only degree conferred by the University. The number of Americans easily let through, has, the author thinks, somewhat paled its nimbus. Examinations are no longer held over a repast paid for by the student, or in a professor's private room, or conducted by one or two deputies, or based on half an hour's informal conversation. Either a thesis is extraordinarily good, in which case the degree may be given *honoris causa*, or else there must be an actual and searching examination. Finally docents should pay far more attention to teaching, and should enter upon docentships not much less than thirty years of age.

Akademie oder Universität, by PROFESSOR LOTHAR MEYER. 1874. pp. 34.

This old paper was very influential in the history of the important question of which it treats. It is here urged that special schools such as those for foresters, landed proprietors, &c., should be located near and brought into the closest relations with Universities. Forestry schools should not be in the woods, nor agricultural colleges isolated in the centre of wide cultivated fields; nor mechanical institutes near factories; but these and all other technical institutions should be near universities, and find their scentific bases in its work. These depend upon the progress of all sciences, and if isolated, are prone to develop feeble scientific courses and to become bureaucratic administrative machines. Every pupil in these academies should have a glimpse of that highest and freest of all culture work—independent investigation. Let all professional schools whatever for men of university age, be not only near but incorporated in the government of some university.

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III.—Other European Countries.

La Réforme de l'Enseignement Supérieur aux Pays Bas. M. Vernes, Paris, 1879. pp. 54.

The higher educational institutions of Holland were profoundly reconstructed in 1876, and this pamphlet is a concise exposition of their present organization. Before this there had been no essential change since 1815. The universities and the "atheneums," which were not gymnasia of which the university was the normal prolongation, constituted middle and higher education. The atheneum was a municipal or communal institution; that of Amsterdam was founded in 1632; that of Deventer in 1636. They were universities without the right to examine and confer degrees, and adapted to those who could not give long time to professional study. There were in all, six. That of Amsterdam was made a university in 1876, so that this little country now has four in all. Under the law of 1815, there were five faculties, and denominational theological faculties received state subventions. Leyden could have but 21 professors, and Utrecht and Gröningen 18 each. The professors are state officers, and retire on three-fifths pay at the age of 70. The certificate of a Latin school or gymnasium is no longer required for admission to the courses of the university, but only for admission to its examinations. The degrees are candidate (corresponding to the French licentiate,) and doctor. Each is governed by a board of five curators which exercises functions not unlike that of the French conseil de perfectionnement. They are men of the highest social positions, named by the government, serving gratuitously. They propose to the minister new chairs, and two names for every vacant professional chair.

It was proposed to reduce the number of universities to one. Leyden and Utrecht are very near together and some urged the suppression of Utrecht, others that of Gröningen. The friends of each defended it so well, however, that not only were both sustained but a new one established. This can only tend in so small a country to lower the level of education by unduly enhancing professional, as compared with scientific studies, or to make them organs of the vulgarization of literature and general scientific ideas. The evil may be mitigated by grading Leyden as first and highest, and by specializing as is now beginning to be done by law. Meteorology, *e. g.*, is given to Utrecht, and Semitic languages to Leyden, etc. Instead of being pepinières for reformed pastors as under the law of 1815, the new law (church and

state were separated in 1848) gives equal protection to all, and establishes a seminary of the church of the majority. Instead of suppressing the theological faculty, as was proposed, religious instruction has been given a lay or scientific character. The philology of the old and new testament language, sacred history, philosophy and psychology, comparative religion and the philosophy of religions, taught by such men as Scholten, Kuenen, and Thiele represent the faculty of religion. Here professors are chosen for their scientific merits and without reference to confessional considerations. Beside these, church professors, representing Catholics, Jews and Protestant denominations, may teach side by side in their own seminaries the various religious differentia. These latter are left to the churches which while thus outside the university can profit by all its advantages. The Catholics and Protestants made common cause but in vain against this introduction of profane science into the university. A proposition, that all university degrees should be not only based on work, but purely honorary and entitling no one to exercise any profession, was lost, but the rights conferred by the 17 special doctorates were defined and the examinations leading to each determined.

The administration of the universities is, in a general way, left to the minister of the interior, as till lately was the case in Belgium. An annual report on the state of the universities is furnished each year to the States General and some of the most remarkable debates here have been on educational policy and methods. The curators have lately instituted the docent system, and have apportioned students fees to various accounts instead of giving them to the professors whose lectures were heard. The secretary of the board of curators is named by the king for five years and salaried. This board must watch and enforce the law, correct irregularities on the part of professors or even suspend students for six weeks. They can permit instructors to give other courses than they are appointed to give. Only the king can permit a professor to exercise any public or outside calling. Under the curators is the senate, whose rector is named for one year, by the king, from a list of three sent up by the senate. The rector is assisted by four "assessors," named by the senate from its members, and calls meetings of the senate when he deems needful. Each faculty has its own meetings and elects a dean for four years. The annual expenses of the university of Leyden are over $200,000, of Utrecht and Gröningen about half that sum each. The salary of full professors begins with nearly $2000, and after 10 years service may amount to nearly $3000. State money was accorded to relig-

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ious professional schools in existence on the passage of the law in 1876, and the reformed church has an elaborate school of dogmatic theology, history of the reformed Dutch church, ecclesiastical law, catechism, homiletics, etc., the accounts of which are appended to those of the university proper, and which receives state subventions.

Dutch students, now numbering nearly 2000 in all universities, are largely from good families, have no *corps* but student societies owning their own club-houses, to which professors are often invited. They enjoy complete freedom and discipline is rare. The government provides six scholarships of about $400 each to each university. The one large club in each university is a tribunal of honor, with its own laws and government. Nearly all students are members. If the professors are exempt from inspection from above they are not from below. The journal and annual almanac published by the club expresses student griefs and criticisms freely but with a courtesy peculiar to the students of Holland. There is no social position more respected in Holland than that of professors.

Tomsk University.

On Aug. 3, 1888, the new Siberian University of Tomsk was opened with impressive ceremonies. As early as 1803 the project was broached. Little was done till 1877, when a commission was appointed to select a town. Tobolsk had chief historic significance, Omsk was the military centre and the seat of the governor general, and locations here would mean military discipline. Tomsk was chosen, a building committee appointed to determine plans, and in 1880 another to carry them out. The central building is 226 metres long, in a beautiful birch-grown park, and cost nearly four hundred thousand dollars, and contains the aula, library, church, lecture-rooms, residences of the rector and inspector. Besides this, a building for anatomy, one for clinics, a building for the manufacture of gas, a water building, and a chemical laboratory are under way. Private funds have supplied more than one-fourth of the expense, and have entirely built a hall where 100 students can live at a total cost of seven dollars per month. Only a medical faculty has been established. When complete this will consist of twenty-five instructors. Three other faculties will be added, an historico-philological, a physico-mathematical, and a legal. During the first year there were seventy students, and forty stipends have been established. Although the library contains 70,000 volumes, most of them are gifts, and very few are scientific, so that there is great dearth of needed literature. Private donations

have flowed in from all parts of Russia, from friends of exiles, and the new university has created great national enthusiasm. In August, ice blocked the mouth of the river and the town was submerged, and much of the rest burned. An high public functionary embezzled 57,000 rubles, and the press was owned by criminals, and so disreputable that all the professors pledged themselves to print nothing in it. The condition of life was so hard that full professors received 4500 rubles, a salary larger than at any other Russian University, and the severe new University code of 1884 is relaxed in several particulars.

Zukunft des hoeheren Unterrichtswesens in Japan. DAS OSTASIATISCHE LLOYD, Schanghai, July 4, 1890.

Entwurf eines Lehrplans fur das Japanische Lyceum in Yamgutsi, by DR. EMIL HAUSKNECHT, July, 1889.

Education in general, consists in transmitting the totality of mental and moral culture from one generation to the next. In Japan this continuity has been sharply broken. A foreign culture has been suddenly introduced, and that in the face of the old traditions of exclusiveness. Older people there less readily break with old ideas and assimilate new European science, customs and dress more slowly. The young have learned these so rapidly that decent respect for parents and for age is often lost. So strong is the peculiar corps-spirit in Japan that one graceless pupil often leads his mates to school strikes of divers forms against native teachers, who often have no idea how to treat pedagogic material. Dr. Hausknecht, who now returns to Germany, after serving three years as professor of pedagogy in the university of Tokio, proposes to meet these evils by establishing a lyceum, taught by teachers, all of whom must have taken a three years course in an university, including one year and a half of pedagogy. The latter he has made very detailed in all the daily routine of a teacher's calling, and has based all on the system of Herbert's new school followers, Willmann, Frick and Schiller, by means of which he hopes to destroy the worship of Herbert Spencer's shallow educational platitudes and the less objectionable Bain who are now greatly in vogue in Japan. Dr. Hausknecht's plan is expensive, but has already been completely adopted by one class in an institution at Yamgusi. Four other schools have partially adopted it.

The curriculum carries through eight years the history and literature of China and Japan, along with preponderating western subjects, and at last widens to oriental history. The course is one with no bifurcation till the last year.

Drawing, beginning with netz and stigmographic systems,

is carried through nine years. The lives of the founders of great religions fall in next the last year, but the Japanese can never understand why religion seems so important to occidentals. Heretofore there had been almost no course of study, and autodidactism had wrought growing confusion. Whatever we may think of this very interesting plan of study, or of the author's thorough-going Herbartianism, all must admit that almost any system is better than chaos.

IV.—America.

History and Management of Land Grants for Education in the Northwest Territory, by Geo. W. Knight, Ph D. Putnam, N. Y. 1885. pp. 173.

After congress had received from the various States the relinquishment of their claims upon the Northwest Territory, it desired to cash these lands as soon as possible for the extinguishment of the National debt. The plan of dividing them into townships of six miles square, and reserving one of the thirty-six mile square sections for schools originated, not with Jefferson, nor in the educational zeal of statesmen of that day, but in the desire to make the lands more tempting to settlers. The third of the six irrevocable articles of compact in the great ordinance of 1787, declared that "schools and the means of education shall forever be encouraged." Reluctantly two townships near the centre of the State were given by congress for a "literary institution." By subsequent laws, each of the five States under this ordinance—Ohio, Indiana, Illinois, Michigan, Wisconsin—has received from the public domain an amount of land equal to one thirty-sixth of its area for schools. As lot No. 16 was sometimes good and sometimes bad land, the proceeds of its sale in states admitted since 1836 have been consolidated into one fund and distributed pro rata. In 1850, all unsold wet and swamp lands were granted to the State in which they lie, and the States themselves in many cases set apart a portion of the profit from these lands for education. The last donation by Congress for educational purposes was brought before Congress in 1857, and passed in 1865, giving to each State 20,000 acres of land or its value in scrip for each senator and representative in Congress, for the study of such branches as are related to agriculture and mechanic arts. The southern congressmen opposed this invasion of the province of the State, but have since availed themselves of its provisions.

Dr. Knight traces the history of these lands in each of the five States with much detail and tabulates at the close the school, agricultural, swamp, saline and university land grants

respectively in five instructive tables. The story is a sad one. Most of the States hastened to lease or even sell the lands more cheaply than the United States placed public lands on the market, often at lower and lower rates each successive year, so much more eager were the legislatures to attract settlers than to provide for education. The passion for rapid growth was aided by the plea of immediate educational needs, yet often the income thus derived was not used for educational purposes for many years. Over-legislation, sometimes amounting to almost annual change and reconstruction of policy and resulting chaos, much worse under a system of leases than sale in fee, favored the latter course. Local and special enactments of the loosest kind, aided by a lobby perhaps nowhere worse than in Ohio, the complications of bookkeeping, forced sales, often at from five to twenty per cent. of what might have been realized even after State superintendents of education were appointed (who lost their position if they spoke too plainly); such is the sad story, repeated in different states. In Indiana the school lands were placed largely under local control, and some were well managed and others entirely lost. Under the State system of Ohio, the fund arising from the sale of lands is gone and the people tax themselves to pay interest on it. In Indiana this fund is intact, and can be borrowed of the county treasurers, on good mortgages, at any time in small sums. The latter has so far yielded higher interest, but the expense of the system is greater. In Wisconsin the period from 1858 to 1862 is shown to be one of fearful waste and loss. In the administration of the University land Ohio has perhaps the worst record. Forty thousand acres of excellent land rent for about four thousand dollars, on a valuation made seventy-five years ago. This rental is about one fifteenth of its valuation for taxation. In Indiana this land has been sold for two dollars and thirty cents per acre, and is "inferior to none in the State." Illinois, however, is said to have the "worst abused educational trust in the Northwest," selling University land and using the proceeds for more than a quarter of a century before starting an University. Wisconsin has made grants to "compensate" for her deficiencies.

Wisely managed these lands would have been sufficient for the needs of the people. As it is they are both an aid and a stimulus. It is pleasing to remember that many states admitted since have profited by the errors of these. Despite the noble example of Michigan, the apathy of voters to higher education is apparent. But for this cause the frequent embezzlements and flagrant diversions of funds here described could not have occurred. The confidence in the ability of

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legislative assemblies to vie with private corporations in conducting higher institutions of learning in this country is not strengthened by reading this sad record.

The general lesson is that wherever the lands or funds have been entrusted to responsible local management of township, county boards of trustees, or superintendents, they have been well cared for, while to the State legislatures are to be ascribed the errors and losses. In Ohio and Michigan the entire support for schools in those states is raised by taxation and the school funds are purely ideal, constituting merely a moral and legal obligation on the people to lay an annual tax forever to pay interest on funds spent by their ancestors. Dr. Knight has found in all these states but one petition asking for an increase in the price of the land or suggesting anything for the benefit of the fund.

The History of Federal and State Aid to Higher Education in the United States, by FRANK W. BLACKMAR, PH. D. 1890. pp. 343.

This is a circular of the Bureau of Education. The author attempts to present in concise form the plans of thirty-eight States in dealing with higher education, particularly in the South and West, where State education has its strongest hold, as well as the history of congressional aid. To our fathers, "common" or "free" schools meant colleges as well as institutions of lower grade, and they often desired the higher even more than and before the lower. That this work may be the first step toward an instructive and fruitful comparison of the several States, as well as to reprove the local conceit and complacency so common now in education, is greatly to be hoped.

In colonial times church and state co-operated in education to develop the individual, and not till the states united into one great republic did education begin to seem a necessary public defence against the danger of uneducated masses. The Dutch and Swedish colonists gave education into the hands of the church, which was the primitive schoolhouse, and the pastor often the schoolmaster. Educational laws made for the colonists in England were from motives of benevolence, and the propagation of the gospel, and colonists and Indians were often viewed in the same light of charity. After the political awakening of the declaration of independence national consciousness and a sense of the sovereignty of States caused attention to turn to the needs of universities and schools for new reasons. Charters with privileges, exemption of professors and students from military duty, land and money endowments, lotteries and special gifts were the chief methods of aid. Twenty-four states have now estab-

lished universities by statute laws, and two provide in their constitution for the establishment of a state university. In every state except California unproductive university property is free from taxation, and one state once exempted all the property of professors. In general the privileges of non-state institutions are growing less in states which have flourishing state universities; sometimes as church and state separated, the former aided the classical school, as the latter favored scientific and industrial establishments, and its interest in political education has distinctly declined. Education is not money-making business. It is charity or for public safety, and no advanced institution of any value can pay its way by tuition. It never declares dividends. To tax them is to tax light itself and to discourage individual munificence. There is no more fruitful investment for the tax payer than that which comes to him from this exemption.

As the sentiment and fact of federal union grew, the latter seemed to depend on growing intelligence and so the national idea of education grew with that of Union. As the structure of our government gave unprecedented force to public opinion, it seemed imperative that it should be enlightened. Sectional and even local prejudice must be removed. Washington, as is well known, bequeathed stock for a national University. Pinckney moved in 1787 that Congress be authorized to establish one. An university without religious preferences was a favorite idea of Madison's. Edward Everett insisted that there was no reason why governments should support primary that did not also as strongly apply to its support of academic education. Thus our history favors it; it is the only republican democratic way: public gifts best stimulate private ones, and may perhaps best direct and aggregate them. If the government endows lower it must logically also endow higher education; as it establishes military and naval training, it cannot logically neglect the civil service of the country. Our highest material and political interests require it, as do our dignity and the duty to see that all the world's stock of genius be developed to aid the world's work. Public should not antagonize private institutions. Both should flourish for diversity and liberty. We must not forget, however, that we have no well endowed universities in this country yet. No educational system can be called national till it makes a "ladder, one end in the gutter and the other in the university"; but let the climber find a real university at the top. Real educational improvement works not from the bottom up, but from the top downwards.

In 1811 a congressional committee reported that it was unconstitutional for the national government to found a univer-

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sity. In 1816 another committee was appointed. In connection with the southern fund the matter was again discussed. The Paris exposition of 1873 convinced our commissioners that the best of our universities were poorly endowed, "but sorry skeletons of what they should be." If we are ever to be a cultured as well as a clever folk, they must be made so free from denominational and local objections as to secure the patronage of the people regardless of sectional or partisan relations. The bill they reported for a $20,000,000 university at Washington did not pass.

The history of Federal aid begins with the ordinance of 1787. The policy of setting apart $\frac{1}{36}$ of the land in new townships for education has since been adhered to, and each State but three admitted since 1800 has received two or more townships for founding an university. This policy was partly accidental, and its far-reaching results were not at first seen. It was certainly not adopted on its educational merits alone. This ordinance of 1787 has had greater effects than almost any single law, and among other things created many of our best universities. Again, in 1836, twenty-eight millions of dollars, which was the surplus revenue of the government, was distributed among twenty-seven states, most of which states applied the whole or a part of it to education. Next in importance to the ordinance was the grant of 1862. Thirteen states gave the proceeds of their land scrip under this act to existing higher institutions, and thirty-three new ones were erected. This act originated in local demands for more practical education. Many kinds of institutions from farm schools to old-fashioned classical schools with some science, according to local interpretations of the law and local needs, sprung up. In New York, Ezra Cornell bought the New York land scrip and located the land in Wisconsin. All administrative responsibility rests with the states, which can use only the income and must replace the funds if lost. This grant was intended to be a nucleus of and a stimulus to private and state munificence. Next came the supplementary act of Congress March 2, 1887, authorizing experiment stations for experiments on soils, plants and animals. The government has also made small grants for specific purposes, and also percentages of the proceeds of the sale of public lands. The saline lands, the grants of 1841 for internal improvement, which some of the eight states benefitted used for schools, aids to colored schools and to institutions in the District of Columbia, all these foot up to a large but incalculable sum. At West Point (1802) where the students are, as it were, paid to come, at an annual appropriation of over $300,000 per year, the discipline is of itself the best possible edu-

cation. The same is true of the naval academy (1845) which receives about $175,000 per year. The naval observatory which, as is well known, grew out of an act (1842) to build a house for the charts and instruments of the navy, with the nautical almanac and a library of 85,000 volumes, and a new observatory building now approaching completeness, has steadily grown in importance and expensiveness. The national library of Congress [1800] has now more than half a million volumes and a new building on the way. The Smithsonian bequest [1826] now has a permanent fund of over 700,000 dollars, with its five chief series of publications, its library of nearly 250,000 volumes, its vast system of exchanges, and the national museum with nearly three million specimens, and spending more than $250,000 per year and which by its lucid methods of classification and exhibition, and by instruction in a few arts, its public lecture courses, now seems seeking educational fields as well as a closer affiliation with and control of the National Academy, at first sought to cut off all departments not in the line of original research. Thus the museum of art, the meterological bureaus, the herbarium, its library, have now passed under other management. The Bureau of Education, first established as a department, is a great clearing house of historical and statistical information, spending most of its 50,000 dollars per annum in salaries and sending out nearly 20,000 letters and 200,000 printed documents per year, and having 2500 objects in its museum.

In New England the first institutions were colleges and not schools. The basis of an educational system was sought in the higher grades. Motives were religious and not political. The need of a general school system to the state was not yet understood. In general there has been considerable diversity of practices in the different states. In more states than one the history of education has been the history of public lands, and that has been confusion itself. Texas had no national lands. In Rhode Island the early religious dissent delayed action, and the legislature has never helped Brown University. Nebraska, Wisconsin, California and Arkansas seem to have sold their lands best. A number of states have authorized lotteries for education, and others have granted a perpetual annual income to State institutions of a fraction of the taxable valuation. Maryland had an educational policy which would have placed her among the foremost, but very early in this century it was abandoned. Pennsylvania early attempted to establish high schools in every county, and its early colleges were to furnish teachers. This state for a time

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made grants to five colleges on condition that they would train teachers pledged to teach for a certain time, and aided all institutions having four professors and 100 students; but in 1838 the policy of state control of colleges and universities was abandoned. Tennessee once contemplated an admirable system of education. Perhaps no state has pursued a more wild and ruinous policy than Mississippi. Nebraska has a system of organization by elective regents, which is admirably adapted to keep the university out of politics—a system which Colorado has followed. New York has a history of great interest: the old Dutch Latin schools for teaching classics and writing and arithmetic once like the Swedish schools of Delaware, largely under control of the church; King's college, with its vast board of trustees, representing nearly all the political organizations, religious denominations, and leading financial interests of the state, reverting to an hospital during the revolutionary war, and re-emerging as Columbia college with a board of trustees at length distinct from the regents; Cornell, with 512 free students from the assembly districts, one of the best examples of a state institution, but for which the State has done very little, and last the board of Regents, visiting and exercising a growing control over 301 academies and 30 colleges in the state. Delaware, like Dartmouth College, began by a desire to educate and christianize the Indians. Of the New England states Vermont has shown least appreciation of higher education, and New Jersey has never aided Princeton college. On the whole Massachusetts and Virginia have perhaps shown more interest and exerted most influence. The western states early came to look to the national government for aid to an extent unknown in the original colonies.

The author has given us a very convenient birds-eye view of his subject, and appends useful tables and a most remarkable "historical view of the state of education in the old world," in eight pages. This gives an almost puerile close to a monograph which is best in its earlier chapters, becomes increasingly slight and general as the work proceeds to this end. The field covered is vast, often each state or single institution meriting a treatment as extended as this entire volume. This does not, however, destroy its value as a "periscope," which is certainly great. We suggest another on the municipal school systems of this country, and another on educational endowments in this country. If such compilations require they would also save much time and are greatly needed.

An act respecting the Federation of the University of Toronto and University College, with other Universities and Colleges [Bill No. 149, 1887], pp. 19.

Facts concerning Federation, by JAMES ALLEN, president of the Alumni of Victoria College.

Some further facts concerning Federation, by N. BURWASH, Chancellor, Victoria College, Methodist, May, Feb., 1890.

These and half a dozen other pamphlets before us present a tolerably clear sketch of this interesting and important movement in Canada. A few years ago Toronto University asked more money from the legislature. The denominational colleges in Ontario protested unless they were also aided. A conference of heads of colleges devised the above bill—the fifth prepared for a similar end since 1872. Under this act University college and Victoria college are federating, and the others staid out from the expense of removal. On the new plan nineteen subjects will be taught by the new university, eight others by both the new comers, while besides the eight, Victoria will maintain its complete theological faculty. The incoming new colleges surrender to the University the power to grant degrees save in theology. Nearly half a million dollars is required to federate, but the needed degree of independence would cost much more. Under the new plan the denominational students at Toronto will be brought under the influence of their own denomination, while the students of the incoming colleges will have in addition to what they now enjoy all the advantages of additional arts courses at Toronto without added expense. The three other colleges of Ontario, Queen's, Trinity and McMaster having nearly a million dollars each, as yet hold out. This new movement of co-operation, in place of competition and duplication is full of interest in this country, where conditions are in no other essential respect different from those in Canada, save that in parts of the country institutions are thicker and there is more duplication. The opposition to the movement is still active. Less religious influence near a larger undenominational school, loss of independence by the incoming colleges, and the expense of removal are the objections urged by the university alumni, professors and leaders of the denomination. Mr. Allen has collected many opinions from leading professors in the states and others, on which he bases a vigorous argument that undergraduate work, while it should be strictly disciplinary and mostly prescribed, can be made thorough with little expense for books and apparatus. His estimates foot up as follows: physics, for all needed apparatus for a seven months' pure course, $3,000; for an advanced honors course, $4,000 more;

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chemistry, mineralogy, natural history and geology, would bring the total for a pure course hardly up to $10,000. To maintain this an additional outlay of $1000 per year would be needed. The estimates for the cost of a good working library for an undergraduate college, with from 200 to 300 students, range from 3,000 to 5,000 dollars. There must be the right man to purchase, and also to use these books and apparatus, and there must be no elective or "free lunch" system, for these tend to premature specialization. This must come later in Universities and is in comparison enormously expensive. That boys during the most susceptible period of their lives should be brought under the influence of professors who belong to the religious denominations of their parents, Mr. Allen stoutly maintains. The authorities of Victoria University at last gave notice to the Provincial Secretary that they had resolved to suspend their power of giving degrees other than in theology. Federation was thus proclaimed with the University of Toronto after November 15, last.

In this connection it is not obvious why, in the apparently very hasty British Columbia University act of 1890, all future religious, theological and denominational colleges are excluded from affiliation. In Winnipeg the University, which is non-sectarian, as a provincial institution should be, is little more than an examining board, conferring degrees to affiliated denominational colleges.

The Future of American Universities by ANDREW D. WHITE, L. L. D., Ex-president of Cornell University. N. A. Rev. Oct. 1890.

If four universities are too many for Scotland, and twenty-one too many for Germany, what can the United States do with 400? Our best universities spend yearly far more than the vested funds of others. The war waged in the west by little sectarian colleges against the noble state universities by aspersing their religious standing is denounced as monstrous and ridiculous. The pretensions little institutions must keep up is "at the expense of manly self-respect." Their graduates have fine training in mathematics and Greek and Latin, but find themselves ignorant, deceived and beaten at every point by men of real modern training. In the pulpit this is often pitable. All but twenty or thirty of the four hundred should lay aside their "ludicrously absurd" pride and in the presence of a nation of 60 millions, and at the beginning of the twentieth century frankly become what they really are, intermediate schools or colleges, taking boys from schools at thirteen or fourteen, and after four years sending them to a

real university. The latter should drop their freshmen and their sophomore classes, thus both would be stronger, and good professors in the lower would be called higher. The presidents of the intermediate colleges would stand better before the country than now.

University Degrees, by F. S. THOMAS, M. D., Syracuse, 1887, pp. 37.

The author enumerates seventy-five degrees, which eliminating duplicates differing by only the inversion of letters are reduced to fifty-six, which are classified as follows: In medicine 11, law 9, divinity 4, fine arts 7, science and letters 13, technics 12. Among the more unusual degrees are B. P. Bachelor of Painting, (Syracuse). D. V. M., Doctor of veterinary medicine, (Cornell), A. M. B., master and bachelor of agriculture. R. P. D., Doctor of political economy. Ph. C. Pharmaceutical chemist. D. E., Dynamic engineer. In mediæval times an academic degree was almost equivalent to an order of nobility or a decoration bestowed by a monarch. The writer suggests a congress of college presidents to prepare a new system of college degrees; that the doctorate be left for the medical profession; that a man append to his degree the place and number of years spent there, (thus A. B. Harv, 4); that degrees be arranged in courses so that the higher presuppose the lower; that those holding degrees should more often append them to their names.

Cheap Academic Titles. L. W. BACON, Forum, June, 1889.

Albert Barnes would accept no degrees, because he would not be called rabbi, nor sink to the common "ruck of doctors of divinity." To wear American titles,—cheap because colleges "grow rich by degrees,"—in Europe is a fraud. The writer disapproves the Harvard habit of "doctoring" the governor of the state, and states that at Yale, "this power is used without scruple to gratify personal feeling or to pacify importunate beggars." The clerical "sex" have these "semilunar fardels" in wild profusion. The use of D. D. is most descreditable, and that of LL.D.—most droll. To remedy the present degredation of titles, it is suggested that the newspapers give the antecedents of each recipient of honorary degrees; that they be given to none who apply; that the faculties and not trustees nominate all candidates so that medical colleges shall not give degrees in divinity as was once the case. Otherwise we might turn these relicts over to Chatauqua to play with till the plaything is worn out.

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A National University. A study by WILLIAM A. MOWRY, 1889, pp. 18.

The old New England way of state aid to higher institutions of learning, the national policy of aid adopted ever since the ordinance of 1787, Jefferson's plans for the university of Va., are precedents for governmental support. Again with 433 collegiate institutions, 1,507 high schools and academies, with twelve million children in school, "what means Cornell, Johns Hopkins, and now what means Clark University." They mean that while in America the elements of education are more widespread than in Europe, the higher education of the old world is far in advance of anything to be found with us." While Johns Hopkins has been a phenomenal success, we now "need an institution far beyond" it. There is also a long list of scientific and political fields where knowledge sorely needed is not yet attained, but is practicable. What is wanted is now a national university endowed with $200,000.000, invested at three per cent., and thus yielding an annual income of six millions. This would be but one-third of one per cent. on the total valuation of the country. This university should be controlled by thirty trustees named by the president, confirmed by the senate, ratified by the supreme court, and *ex-officio* members, perhaps including ten college presidents, each holding office for ten years, and the board self-perpetuating. Of its students, one should be appointed to try for the entrance examination by every member of the House of Representatives from his district, and every college of good repute, should send one. Fellowships should be given only to those engaged in research, and might be held for one year or for a life time, and all the great natural phenomena of our country should be most carefully studied; these salaries should vary according to merit, and should include our best inventors, novelists, poets, etc.

V.—MEDICAL EDUCATION.

Ueber das Lehren und Lernen der Medicinischen Wissenschaften an den Universitäten der deutschen Nation, nebst allgemeinen Bemerkungen über Universitäten; eine culturhistorische Studie, von Dr. TH. BILLROTH, Wien 1876, pp 508. Supplemented by the same author's *Aphorismen* zum Lehren und Lernen der Medicinischen Wissenschaften, 1886, pp 71.

This work by the distinguished Austrian surgeon still remains the best and most comprehensive study of the general subject of medical education. History traces three

medical traditions or canons, the Greek of Hippocrates, the Roman of Galen, the Arabic of Avincenna. These all became dogmas in the universities. Direct practical teaching from doctor to pupil was excluded from the Universities till the middle of the eighteenth century, when it was admitted at Leyden after great opposition from the *doctores rite promoti*. There had long been many volk's doctors, Roman gymnasts and bathers, etc. who did most of the practice, gradually learned the "science" of Galen, and fought their way, first as a surgical guild, into academic circles against the medical faculty after a struggle of 200 years. To "found an University," the medæival state had only to recognize a voluntary society of students and teachers and vest them with certain privileges, and to divide them (in the case of Vienna, 1384), into four "nations," each under a procurator, and four faculties each under a dean. A small staff of permanent paid teachers,—"*doctores actu regentes*," was gradually evolved and students lived in commons in the *bursae* watched by baccalaureates and licentiates. Degrees were very high; sovereigns insisted on conferring them as they did titles of nobility and they defined a man's life-career. After studying the seven free arts of the trivium and quadrivium for two years, the student could take the bachelor's examination which was held four times per year, and gave new rights, duties, a new garb, etc. Then followed the baccalaureate, licentiate and master in medicine, each requiring two years of study, and the final obligation to teach one or two years in the faculty in which the promotion occurred. All was at first learning by heart and then copying, as there were no printed books and reading or writing often had to be learned at the university. The preparatory course to Galen and Avincenna was Aristotle and Euclid, whose voluminously beglossed text must be defended as infallible. A too-bold objector to the medical canon was excluded from the university. From the Alexandrian school 300+B. C. to Vesalius there was no research, and medical practice was a crass empiricism of which the medical curriculum and literature gave no trace. Till 1482, all teachers of medicine must be clergymen. Against this powerful scholastic tradition, anatomy slowly fought its way in the sixteenth century, sheltering itself under clever dialectic exegesis of the canon, meeting the universal abhorrence of dissection of the cadaver (only one of which a year was at first permitted) by pleading its indispensable necessity for surgery,—a struggle very similar to that of our day for vivisection now happily ending, thanks to the great achievements of antiseptic surgery, and the triumphs of Pasteur and Koch which could not have been made

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without it. First only male bodies were permitted, sometimes direct from the hangman, or sometimes to be prosected in the church yard only. Gradually it was seen that the canons were wrong, and special teachers of anatomy were appointed at various German Universities. Later botany and chemistry were slowly evolved out of the old apothecary lore and crept into the curricula. The surgeon ranked with the barber till anatomy exalted his calling and gradually substituted the state examinations in the place of the guild-master's letter. The academic beginnings of the other leading medical studies are similarly traced with some detail with considerable reading and excellent practical sense by the author who makes no claim to exhaustive historical eruditions in the field.

Now investigation has taken the place of tradition. Science has three duties,—to advance the love of pure science, the endless longing for truth, the constant research which must be regardless of all consequences; to work out new and better ways of demonstration for both results and processes, that as much as possible of the vast and rapidly increasing body of important facts and truths may be imparted; to seek an ever new modus vivendi with all sorts of practical relations. The state must furnish and demand more and more of its universities. The practical doctor must not be so learned as to be conceited, discontented, estranged from the people or to hate small places, and on the average is not gifted enough to carry very much science. Yet he should belong to the aristocracy of culture, and should not begin with practice, nor begin his education with the practial side, or he is a precocious young old man. No doctor ever regretted any amount of time he may have spent in the study of natural science, but often regrets that he had not more. He should understand that the sources of all progress in his profession are rooted in pure science, and the inner constitution and changes in pure science determine everything. Ophthalmology and laryngology owe their existence as medical specialties to the invention of a new scientific instrument. Electro-pathology, pharmacology, experimental pathology which has lately achieved such triumphs, pathological histology are all based on physiology and microscopic anatomy. The training of doctors is a culture question of national importance. They should know chemistry or they cannot understand toxicology, pharmacology, forensic medicine or hygiene. Chemistry should extend over a year, with perhaps special courses on zoochemistry, physiological and pathological chemistry. Special institutions for medical chemistry are needed; there should be uniformity in such courses in different universities in the

interests of student migrations from one to another. Chemistry should however mainly come in the philosophical rather than in the medical faculty. Physics is needed, but should be taught by a physiologist who might follow Fick's manual. The mechanics of the hip joint, luxations, electro-therapeutics, sight and visions, etc., should be chiefly practical. Descriptive sciences involve more difference of opinion. Botany has among these the most primevial relations to medicine, for the herbalist was once a practioner. Now anatomy, physiology and development of plants and systematic botany with special reference to medical plants, should extend over a year, as should comparative anatomy and zoology. These latter are not a luxury for doctors, but better than anything else give the power of thorough and profound medical thought and reasoning. Brief courses of "zoology for doctors" should be excluded. Mineralogy and geology should have a modest place, Psychology should mainly come in connection with physiology and pathology. In place of the old hodegetic and encyclopedia, tedious overtures to medical studies now mostly abandoned, should come the history of medicine, a strangely neglected and very important course, in which a peculiar and profitable interest may be created. It is also one of the most important sections of general culture history. Practical anatomy (chiefly in winter on account of dissections) with perhaps a prosector for osteology and syndesmology, and some embryology and histology are important, but not topographical or surgical anatomy. Physiology is of prime importance for all the scientific life of the doctor and should have two full semesters. It should not be divided into physical or chemical physiology for pedagogical reasons. New specialties like "stromes-schleifen" are constantly arising, but many fall back to the mother science or else run into the sand. Concerning purely practical chemical studies, there is now tolerable agreement.

Careful tables showing attendance in all German medical faculties between 1867 and 1874, showed a great decline on courses during the war, but a far greater increase immediately after, and then a steady and general decline. Tables are also constructed to show student fees, salaries, cost of buildings, and running expenses, number of instructors, subjects taught and time given to each, and all these subjects are discussed at some length, and academic expenses are compared with these for sustaining the various parts of the German army—canons with the cost of apparatus, etc.—in a wise that shows in the clearest light the great excess of the latter in a painful way, and a new faculty of medicine and natural science is desiderated. Science is too vast for all

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worth knowing to be taught at any one place. It would be folly to restrict the name university to only such institutions. Neither should it be split into department schools. The only common element to all academic branches, the bond which holds them to unity in a university is the passion for investigation and for truth that grows now everywhere more intense as the impulse to know grows. In Tübingen the natural sciences were organized into a faculty by themselves with good results. If to this clinics, hospitals, a military surgical academy, etc. were attached, the author's ideal for Vienna would be presented. The work closes with an appendix giving a very hasty view of medical faculties in other countries.

The *pamphlet* is apodeictic. Mere learning and knowing is only having the raw material of ability, and can never make one a member of the intellectual aristocracy. Women are little helped by their learning. They do not love to work over their ideas. The mark of superiority is love of constantly working over the highest and best material. A mass of crude men pass medical examinations. But 12-15 per cent. of the medical students enrolled attend regularly, (partly because the clinics are so made that but few can see to advantage.) Instead of using lectures as "starters" for further home work, they loaf, then cram and complain of overwork. The talent, ethical force, power of accurate perception, understanding of language by students has been overestimated. Careful statistics show that university attendance is but very little influenced by the professor's ability. Excellence in a faculty does not increase the number of students, but profoundly affects their quality. It may even grow senescent or be rejuvenated while numbers remain unchanged. Industrial development in a section quickens the intellect and sends more men to universities. Central locations and growing commercial importance in an academic town helps attendance. University work grows good and great as teachers become better, expenses increase and students grow less in number. Vienna is the Mecca of foreign doctors, 2700 of whom yearly attend chiefly the brief, and very special courses given for a considerable fee by the younger instructors, and rarely touch the regular student courses. The University of Vienna, it is urged, should drop its international character and protect Austrian students. Many of the foreigners are Hungarians, who should be required to take the first part of their course in native universities, and come up to the great centers to pass their examinations. Only poor students will take all their course in one university. In general students of law and medicine

in Germany, if not aristocratic, do not have to pay their way by lessons like students of philology and theology. This is a basis of respectability for the profession, but in Austria the medical students are often very poor.

The writer complains that 118 teachers of medicine are too many in one place; that where all the extraordinary professors meet to vote, and even two docents can speak but not vote, official secrets leak out, coteries arise, the government justly loses respect for the faculty whose opinion ought to be the basis of its acts and ceases to consult them on important matters. Medical docents there are given a room with light and heat, and a place on the list of lecturers. Most of them who do not become extraordinarii carry a thorn in their breasts to their death. Others seek these positions to marry well and to help their practice. It is hard for them to get laboratory material, and so a society of them conduct a polyclinic for the free treatment of all who come, and since this pamphlet was written have striven to get it recognized by the government as an examining body.

Some European states now require by law a year of hospital experience before the young doctor can practice, and some have required a *triennium campestre*, or at least let the young doctor loose for a year upon country people before he can settle in the city, and in some the country is divided into medical districts and each young doctor must await a vacancy. In France nearly all departments have their medical schools, and graduation entitles to practice in the department, but only a diploma from a central university gives the right to practice all over France. It is the wise union of all its hospitals in which it surpasses all other cities that makes Vienna such a medical center. Nowhere perhaps is there to-day so hot and on the whole wholesome rivalry between the docents and the older professors as in its medical department. The new specialties that splinter off from the old trunk courses and attract so many Americans and other foreigners, are the work of the young men of whom our author often seems so jealous, and would like to see relegated to small universities to work their way up to the large ones. Here we find the hospital roués, who have been so long surrounded by interesting cases and have come to love them so passionately, that even general city practice, to say nothing of the country, which they dislike in direct proportion as they have specialized, would seem insipid. We are now informed that plans have been drawn and that special efforts are being made to have a new medical building so magnificent that it may vie with the new university building, which cost nearly 16,000,000 marks. At present there is an over-production of doctors in Austria,

and if the time consumed by the compulsory military service were saved, and the course proportionately prolonged and enriched, it may be that in connection with changes planned for 1892 great advances will be made. A Cerbeus to watch each fund; man, who has struggled through evolutionary ages to get above animals, not yielding the right to vivisect them for his good; all doctors coming back annually a few days at least to the great university (where all should take their degree but none their first year) to brush up, able if need be to apply the moral treatment of a lie (congratulating the patient on his rounds in the hospital that he is looking so well, and adding to his students miserrimus, mox morietur), a medical hierarchy from the lowest wundartz up, which can furnish enough of either of two noble types, the doctor who prefers a small chance of great success in the hot competition of a city, or him who chooses a modest but sure country increase,—these with what precedes will serve to show the author's ideals.

Some Advantages of the Union of Medical School and University, by WM. H. WELCH, M. D., Professor of Pathology in the Johns Hopkins University. Address at Yale University, 1888.

In this country and in England medicine is chiefly taught in many unendowed schools unconnected with universities, or with only a nominal connection. In Great Britain medical degrees and license to practice can be obtained, not from the school giving the instruction, but only after examination at the university, or the boards of certain corporations. That neither state nor university controls is one cause of the low state of medical education in this country. In Germany medicine is always a part of the university. In Cambridge, England, not only is the new medical school part of the university, but there is an almost academic school of physiology. The union should be real and close. The first two years might be taken in the academic department, and be devoted to biology, comparative anatomy, chemistry, physics, &c., to the scientific rather than to the practical side of medicine. These fundamental studies are most neglected here. These might prepare for an examen physicum, which is the first half of a doctor's examination in Germany. Not only can these be best and most economically taught in an academic department of an university, corresponding to the german philosophical faculty, but they could precede graduation and allow more time for clinics, hospitals, &c., without postponing practice too late. Physiological psychology is a valuable link between the medical school and the university. In Paris

the medical school is too apart and accessory. These propaedeutic studies are in no sense professional. Of the twenty German universities, all with medical faculties, thirteen are in towns with less than 80,000 inhabitants. All the vast body of truth in all medical departments not immediately applicable to practice, is best conserved, and such studies as bacteriology are best pursued where the scientific spirit is strongest, viz., in universities.

Remarks before the Academic Council of Harvard University in 1886, by PROFESSOR H. P. BOWDITCH, Dean of the Medical school.

The age of students entering Harvard College has been steadily rising till, in 1885, it had become nearly nineteen. With three years required at the Harvard school, and four recommended for the degree of M. D., a year for hospital practice, and one abroad, and then the unremunerative early years of practice, the young doctor, who has insisted on a thorough training for himself, finds himself established later than in any other land. In Germany the best class of medical students begin their professional studies earlier than boys now become Freshmen at Harvard. In London the preliminary scientific examination, which must be passed by all candidates for M. B., and which marks the beginning of specifically medical studies, is taken before the age of twenty. In Oxford the medical course can be completed by a student entering at the average age of twenty-four, and in France, where the average age of entrance is eighteen, and the course six years, it is also twenty-four. Thus the foreign student, in addition to a better training, enters the profession two or more years earlier. Our academic courses have been developed thus disproportionately less to prepare for professional careers than to give a liberal education more or less complete in itself regardless of the interests of the former. The paper concludes with the proposition to divide the overgrown academic department into (*a*) an academic course of three years, with studies partly compulsory and leading to the A. B. at twenty, and (*b*) a philosophical course of three years leading to A. M., or Ph. D, at twenty-three. The graduate of the first course could then enter the second course, or could pass to any professional school. The philosophical department would then be on the same footing as the existing professional schools, and could develop with the greatest freedom. More students would be drawn to both courses, the best professors would be more attracted to the higher course by the increased dignity and decreased drudgery, and the reproach of trying to force university forms into college

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methods too narrow for them, of trying to do two things with one tool and that tool not well adapted to either, would be taken away.

Report on Medical Education, Medical Colleges and the Regulation of the Practice of Medicine in the United States and Canada, by JOHN H. RAUCH, M. D., Springfield, Ill., 1890. pp. 167.

This admirable report by the secretary of the Illinois State Board of Health is the sixth, and reports greater progress in the direction of higher education than in any previous half decade. This he ascribes in part to the advanced courses at Johns Hopkins and Clark Universities and also to the fact that the number of colleges which require a graded course of lectures for three years has increased twenty-five per cent. There has been an increase of six per cent. of medical schools that require some sort of preliminary examinations. Florida, Tenessee and Oregon have passed medical practice acts and the state of New York requires a preliminary examination of students about to enter upon a course of medical education. There are now 126 medical schools in the United States and 13 in Canada. In the period included in this report 1765–1890, 149 medical schools have ceased to exist of which 18 were fraudulent. Since 1882 the number requiring an entrance examination has increased from 45 to 124, the number requiring attendance upon three or more courses from 22 to 64, those having chairs of hygiene and medical jurisprudence from 42 and 61 to 119, and 114 respectively, the average duration of term time for a year from 23.5 to 25.5 weeks, The number having five months or more from 101 to 121, and of thosehaving six months from 42 to 76. The number of graduates in all in 1889 was 4,337, a slight decrease since 1882. The Illinois Board refuses to recognize fully the diplomas of 28 colleges because they fall below the schedule of minimum requirements. There are now 27 colleges which require or have decided to adopt at a fixed date a four year requirement. Besides the schools there are now 22 licensing and examining bodies that do not give instructions. There is however no co-operation or uniformity of standards or requirements.

The methods of the different states are exceedingly diverse. In Alabama diplomas of medical colleges confer no rights to practice medicine. Nothing can do this but an actual examination by an examining board which is made up of censors of the state and county medical societies. The county board can examine only graduates of reputable medical colleges their diploma being merely a means of getting before the board. The state board examines all non graduates. The written

examination lasts about a week and the papers of the candidate are bound, reviewed, reported on individually and in detail and kept on file at the state board of health. This vigorous law dates from 1877. In Canada all practitioners must be registered. The diploma of each institution conforming to the legal curriculum entitles to registration. In Ontario alone a different system prevails. The medical profession is incorporated, but a council of the college of physicians and surgeons regulates all matters concerning admission, course of study, the licensing of those entitled to practice elsewhere. In Illinois the state board of health must verify and approve the diplomas of all who wish to practice in the state. It may reject them, as it has done since 1877 for 27 institutions, or require them to be supplemented by examinations. Over 2000 applicants with diplomas have been rejected. In Iowa a state board of examiners independent of the state board of health, was established in 1888 which must give a certificate to every one practicing in the state. In Maryland the law regulating medical practice is inoperative. In Minnesota a vigorous state board has just issued its second report. In Mississipi all must submit to a censor's examination. In Missouri a state board issues licenses only to graduates.

RECENT LITERATURE ON INTERMEDIATE EDUCATION.

Das höhere Schulwesen Schwedens und dessen Reform im modernem Sinne. VON H. KLINKHARDT. Leipzic, 1887. pp. 168.

In 1886, Louis de Geer, chancellor of the Swedish Universities, expressed an official opinion that the culture of to-day was slowly and irresistibly cutting loose from the language and literature of antiquity, and at the same time absorbing new and indispensable culture-elements, and that schools must gradually transform themselves in accordance with this course of development. In conformity with this sentiment the time of the classical "know thyself" is past for Sweden. Dropping the long and tedious tale of Greece and Rome she recognizes only two problems in the world of to-day: 1, to know and use nature; 2, the improvement and spread of human culture. This "not yet fathomable revolution" has not been achieved without heated conflict. A new system of weights, measures and money, political reforms of a radical nature and earnest strivings of the best spirits for moral regeneration have attended the educational reconstructions which have for some time been one of the chief topics of the press

and of legislation. All the most vital traditions of antiquity impel to a renunciation of current classical education. The Greeks had no schools of oriental philology. The government is besought to send each year a few experts or laymen to study still more carefully the great fields of school reform in other lands which should be utilized as pedagogic experiment stations. Such study always teaches the folly of many dominant tendencies, and the beneficence of many plans that seem hair-brained.

In Italy the old-fashioned classical gymnasium is the key to all higher education, the only way to the university, admits no modern language (neither does the Austrian) and begins Latin in sexta. In Prussia real schools and real gymnasia lead by a small side door to the university, and the classical gymnasium requires one modern language, and a course in natural history. In Sweden two modern languages are required. German is in sexta, French or English in quarta, Latin in tertia and Greek in secunda, thus proceeding from the easy to the hard, there is a strong tendency to expel ancient languages entirely from the gymnasia while industrial and female education are unexcelled. A student of education who begins his observations in Italy, passes to Prussia, thence to Sweden follows the course of historical development. Italy represents the simplicity and concentration of earlier times; Sweden is most modern. Germany stands in the middle stage, through which Sweden passed in developing from its former Italian standpoint. For lands still in these planes the study of Sweden is a study of the future.

On the basis of Luther's Saxon School Order, rests the Swedish system of 1571. Only religion, Swedish and Latin (Donatus following the A. B. C. book in the lowest class) were studied. A plan of Gustavus Adolphus, (1620) put into operation by his daughter Kristina, provided gymnasia and higher trivial schools for civil officers and lower trivial schools for merchants and other Burghers. Thus early were the classical or Latin-theological schools found insufficient. Swedish law, social organizations, and the reading of authors rather than grammar and extemporalia were taught. At first the third class of schools was designated as the writing class, the arithmetic or apologist class and led rather a parasitic life, but gradually in the so-called emancipation period (1720-1772) the demand for a "useful" knowledge only became so strong, and civil officers became so many and influential that they would convert school and university into seminaries for state officials, and the curriculum became so over-filled with new topics that toward the close of the last century the entire school system was in a state of anarchy.

In connection with the new school order of 1807 the parties who insisted on science and modern languages, and those who under the able leadership of Silverstolpe postulated not positive knowledge but the formation of the understanding and imagination, became fairly divided on modern lines. In 1820, "apologist" schools, and "learned" schools were distinguished by the important legislation of that year. Both had 32 hours per week at some common topics, but the former had no language except French and German, and the latter had Latin, Greek and Hebrew. The object of the one school was discipline of the other useful knowledge only. In 1825, 1832, 1843, commissioners were appointed to scrutinize and report on the educational system, and at last came the great royal decree of 1849 which (*a*) united apologist and learned schools into an institution which should give instruction in all branches taught in both; (*b*) made the gymnasia essentially preparatory schools for the university; (*c*) the systems of department teaching took the place of the class system. At the request of parents or guardians pupils might be excused from Latin, Greek or Hebrew. As the universities still required Latin and Greek much confusion ensued. Many subsequent laws and edicts, however, have completed a national system in which no student save future theologians or teachers of it studies Greek, and even English may be taken as a substitute without any academic disadvantage. Of 35 institutions with the full nine year course, 18 have both a real and classical course to the end, and others for the first few years. Pupils enter at the age of nine and leave at 18. The three lowest classes have the same course.

It seems a strange anachronism that the church oversees all. The 12 bishops of the land constitute the school board under the cultus-minister. Each bishop has his domain and is supported by a consistory or dome chapter, composed of professors or teachers (very rarely of modern languages or sciences.) The bishop's college appoints permanent teachers, judges cases of gross mis-conduct and applies foundations and state money and administers the finances of individual institutions. The nomination of a teacher is, however, commonly by his future colleagues. The bishop (euphorus) chooses text-books, and often methods of instruction, grants teachers leave of absence and if new positions are desired reports to the minister of instruction, and names inspectors for towns in his diocese other than his own. Inspectors are usually clergymen. They must attend and conduct examinations. If a rector calls a conference the inspector can attend, vote and even preside, and he must report to the Euphorus. In Stock-

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holm is a board of education composed of the archbishop of Upsala, mayor and two aldermen, several pastors, and three members of the academy of sciences and the rectors of the gymnasia. Thus this country of four and one-half million inhabitants is divided into 13 independent school domains reporting directly to the ministry. (In Prussia, between the many institutions of a province of three-fourth millions and the ministry, there is only a single board of seven members of whom at least three are educational laymen. The Euphorus has far greater influence than a Prussian school counselor (Schularth.) A Swedish Euphorus has in his consistory a college of at least six practical schoolmen with whom his relations are very close. This sponsorship of the school by the church on the whole works well, but propositions for an entire change in this respect have been made.

Near the time of the final examination at real schools and gymnasia, the minister names from one to four "censors" for each institution to attend, participate in or conduct its oral examination and report to him. These are mostly university professors, and this system began in 1862, when this examination was first made at the same time equivalent to admission to the university. The veto of the censors, even if there is but one, prevents graduation. Their report to the minister is often oral. Three local citizens are also appointed as witnesses of the oral examination. They may even select texts and give out problems. As examinations are held semi-annually during the first five and annually during the other years these duties are considerable. This institution is often criticised and may be compared to the participation of laymen in synodal and other church assemblies but has much to do with the remarkable educational interest among all cultivated classes in Sweden, where the daily press has stated leading articles on education once a month.

The town itself has little influence over its schools but only duties to them. It must provide a healthful building spot, spacious enough for play room, etc., and a house for the rectors, and keep it in repair, or pay him an indemnity decided on by the royal board, and sometimes erect the school building and provide and pay for extra or assistant teachers. The salaries of all teachers are fixed and paid by the state. They begin as "adjuncts" at 1500 krons (1 kr. = 30 cts.) and are advanced every five years, or with "superior" certificates at increased pay. Instruction is free, but pupils must contribute to four funds: (1), lighting and heating; (2), library and supplies; (3), premiums and poverty; (4), buildings. From the first two nearly half the pupils are excused, and out of every 108 krons received from all these

sources the state pays 76 krons [76,210 kr. in all] back in the form of stipends and prizes.

For the younger children [Sexta] there is but one teacher. In later years there are several instructors or one "class teacher" who has most hours and the general oversight. From upper tertia on instruction is given more by departments and less by classes. Department teachers are called lectors, class teachers "adjuncts." The latter may occasionally give instruction on subjects for which they have no license. Larger gymnasia and real schools have as many as eight lectors representing as many departments. The rector is *primus inter pares* rather than an autocrat. His pay is larger, but his appointment is for a term of five, and then ten years, while lectors and adjuncts are for life. He is usually promoted from the staff of the institution in which he was a teacher, which is unusual in Germany. There are $34\frac{1}{2}$ weeks of school and $17\frac{1}{2}$ of vacation. The latter covers the entire summer months. In matters of instruction it is held to be axiomatic that the life of to-day is dominated by science and mathematics. This the average taxpayer in Sweden now sees and heartily believes. The mother tongue and its literature is given the first place and next comes the foreign language nearest akin to the vernacular. In general in the Greek, or full classical line, are found only future theologians and classical teachers; in the Latin line, as in the real gymnasia, are found future jurists, physicians, and teachers and in the upper real schools, are found technologists.

By the law of 1878, in lower grades every two, and in higher every three' hours instructions must be followed by two hours of intermission, and these two or three hours are themselves separated by pauses of five or ten minutes. Only half an hour's singing and gymnastics can come in this two hours intermission. School hours are usually from seven to nine in the morning, from eleven to two, and occasionally from four to five. A school doctor treats poor children gratuitously, examines every pupil at the beginning and end of each term and studies all that can effect the health of the children. His reports must be made each semester on each institution. There is a daily half hour of gymnastics. Sometimes an entire school-day is given up to snow-shoe running and skating with prizes. During the three weeks Christmas holidays the price at the many warm baths (which the climate has made a favorite institution) is reduced one-half for school children. Bayonet and sabre fencing for the two upper classes is given one or two hours per week through the entire course. Very peculiar is the annual hours a day for 8–10 weeks at target

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practice with army rifles. This is done with military discipline, and students take turns in commanding. This is done with more seriousness than the soldier-play recently introduced into French schools.

Sweden presents an unusual illustration of the rule that reforms never proceed from teachers or school officers but from public opinion. Many further reforms are now impending and will no doubt profoundly modify universities. Latin and Greek were placed later and later in the gymnasial course, and have finally taken a modest place in the university as one special department beside others. There is such popular prejudice against these languages that a parliamentary orator it is said will lose votes if he makes Latin quotations in his speeches, and that even jurists and physicians do not study it, and that the 8000 hours said to be spent by a German gymnasialist in classical study were lately declared in a Reichstag speech to be lost time. Whether so radical a reform can be permanent without more conformity in neighboring lands may be doubted. A very important committee in session in 1882-4 made perhaps the fullest educational study ever made in Sweden and reported in favor of important further reforms. Among these were the necessity of a preliminary medical examination covering not only chemistry and physics but most especially botany and zoology as the proper kernel of medical training. Pedagogical study for gymnasial teachers is usually during the trial year. The minister assigns the candidate to one of the few practice schools where he teaches in three chosen branches with criticism, the department teachers in each branch receiving special pay for assisting him. He must not teach over six hours per week. He also hears and is examined on lectures on the theory and history of pedagogics. The universities of Sweden are very unsatisfactory yet. The faculties are (with the exception of the Carolina Institute at Stockholm) too medieval, and students often linger 10 to 12 years at the university before taking a degree. But the great reform of an unitary course for all professions and walks in life and continuing from three to six gymnasial years before the ways diverge, or before even a classical course or special or professional courses are elected or begun is a great gain. On the other hand it should be borne in mind that this "reform" has been coincident with the remarkable advance of the peasant class in intelligence and influence in that country where even a parliamentary leader continues to wear the old half peasant costume of his earlier life. It is with this class that the deposition of classics is most popular.

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Die Erziehung der Deutschen Jugend. VON PAUL GUSSFELDT, Berlin, 1890.

This book has made a great impression in Germany, partly by its popular aphoristic style, partly from the radical reforms it advocates, and still more because the author is thought to be in part, directly inspired by the young Emperor. A great and decisive struggle impends in education, and although on this topic an angel would not be believed, the author with no qualification but experience, and addressing parents, not teachers, pleads for a less artificial training for boys. Every child is at first an original genius, and becomes a regulation man later, and mother-love is the great miracle. Child curiosity is boundless, but however unanswerable its thousand questions, they should be treated seriously and be so met as to lessen the inner unrest that prompts them. They should never be bluffed or fooled, should live much alone, much with older children, but little with adults, and these few. Sometimes flogging does good, like rain on a thirsty land. All prolonged punishments develope spite and ugliness. Lies are nearly always due to fear. Impertinence should always be met by an instant box on the ear. Reverence, obedience, order and cleanliness, simple food often changed, simple dress, cheap toys; —these constitute morals and health. The family educates, the school instructs. We want less knowledge and more culture. Knowledge is gymnastic apparatus of which culture teaches all possible uses. From eighteen to twenty-eight or thirty is the period of information, and most training before this should be for culture; life depends on how these years are used. Intellect is a tower of Babel, a box of Pandora, too much school knowledge cripples for life, and a father who sent his son abroad from the final examination of the gymnasium to forget school nonsense is commended. Memorized knowledge is vulgar, raw material of culture which seems incompatible with real knowledge. Nothing should be taught that later life will destroy. Boys must follow a rigid course of study, but must also have time and opportunity to develope an independent life, giving full scope to individuality. From this latter may spring the talent of the investigators. So-called practical education comes nearer culture than does information, but cannot be made identical with it, great achievement requires one-sidedness, which even defect may cause. Few men of so-called "harmonious" development have ever accomplished great things. Scattering energy makes men or boys commonplace. Boys hate the grammar and forms of Latin and Greek, but love the content of these literatures if they are allowed to come at it. The best of these authors should be

rescued from philologists and taught with the aid of translation along with a few vocabularies and other rudiments of the languages, but Cicero's stilted and involuted kilometer sentences so dear to grammarians should be left alone. The reforms proposed are as follows: Boys should be at school twelve hours each day. Here they should take the day meals, the food being a matter of central attention, and should be left to their parents only evenings or holidays. Of these twelve hours, four or five should be given to intellectual training, the rest to free exercises, plays and games, gymnastics with apparatus, skating and swimming, to which great importance is attached, dancing and sports, and lastly industries. The work of each hour should be a rest from that of the preceding, and a preparation for the following hour. The studies should be as follows: I. the German language and literature, the former taught in every other study and by composition writing, chiefly descriptive at first. II. French, because it is most exact and organic. III. English, because it is the world-language. IV. Mathematics. V. Descriptive natural sciences, physics and astronomy, taking precedure and being taught historically. The catechism of nature reveals the divine in every word. To the atheist only is his work so satisfying that God himself is stopped short of. Religion rests on morals and on religious feeling. The state may give religious culture which it needs, but religious knowledge is best left to denominations. History should be so taught as to show the virtue triumphant over evil. This idealism is the best start it can give boys. This is culture and should engage boys of the middle and upper classes when the university acquisitions and special and professional study may begin. Thus all is to be re-based on child study, the education of the body, in which save for compulsory military service, Germany is said to be chiefly deficient (whence its growing love of the beer house is derived) and on a mental training almost as "modern" as that of the new Swedish code. The author's ideal is evidently developed from the best schools of England, but with important modifications. Such an intern system would be expensive, but as Dr. Th. Bach of the Falk Realgymnasium of Berlin says: it is at once practicable only for the upper ten thousand of Germany, and can be realized for the people at large and the poorer countries only by asymptotic approximation. LeGarde condemns it as a work of decadence, saying the fact that a German could write so shallow a book is proof that an educational reform is necessary. Karl Franzel himself, a well known "modern," while praising the author's honesty and enthusiasm calls him after all something of a fanatic and his plans too military and social

istic. The organ of the German classical teachers calls the author ignorant and presumptuous.

Rembrandt als Erzieher. Leipzic, 1890. pp. 329.

This anonymous book is making a great sensation in Germany where it has nearly reached a twentieth edition. It is written without chapters or sections, as LaGarde writes, whom its contents suggests, while its standpoint is that of E. Von Hartmann. It is a Rousseau-like plea for a return in education and life to nature, instinct, the naive or the unconscious. Art is the watchword of the near future as science is of the present. Bismark discribed politics as the statesman's work of art. Gœthe conceived religion as the art-work of great religious founders. The philosophies of the world are the plastic art of thinkers, and modern science is broadest conceived as art.

All art so far as it is genuine springs direct from the volks soul and its most immediate outcrop is myth, tradition, magic, etc., as even meteorology shows pleasant weather proverbs to be, are true to science. Rembrandt, as indigenous and at botton German is thus a type. His individuality is wholeness. Like Luther he stands upon it and cannot do otherwise. *Sum, ergo cogito,* would be his motto. He is a type growing from within outward, and not made to a pattern from without inward. He is not a modern hero, nothing in himself and wanting all things, but like an oriental hero he is all and wants nothing. Individuality is variation from the norm, the average, and is the root of art. Modern jurisprudence has lost sight of conscience, philology is banausic and has lost all interest in literature. Darwin gives us merely the raw material of another great bibliogenesis. The true artist in science or letters is he who does, makes, thinks all things as the volk's soul thinks it. As human activity wanders from this it becomes irreligious as well as unphilosophical. Once schools taught to think and not know. Now they teach to know and not think. Muses and museums have been each inversely as the other. The Greek gymnasium was the converse of the German. Newton said that he was understood by but four of his contemporaries, and Poggendorf's Annals rejected Mayer's first paper on the heat-theory. New wine not in old bottles means that the new life of Germany under the new emperor is not a matter for the professors but for youth. Thus the fatherland will experience a new birth, for the feelings of the masses wrought out in the thoughts of leaders; this is forever youth, art, education. Science is for art what scholasticism was for religion. The present is an age of mental misery and confusion, and is described by the

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phrases, barbarism with electric lights, conceit of knowledge and brutality of feeling, the age of Zola and Du Bois Reymond and Momsen, mechanism, Americanism, the age when professors thrive and artists decay, which worships what it should burn and burns what it should worship, which crucifies the Christ who is the highest type of artist. There are signs however, infallable and many, that the Gallilean will conquer. Return to childhood is now the watchword; old races cannot then be born again. Germany has been ruled from the top downward long enough. Now Prussia must be peasantized, and re-developed from the bottom up.

The book is thus querulous, pessimistic, written in grasshopper gait, with a chaos of bright phrases and not a practical suggestion from end to end.

ELEMENTARY EDUCATION.

THE RECONSTRUCTED PRIMARY SCHOOL SYSTEM OF FRANCE.

Introductory.

It is in primary education that most was needed and has been done in France. This remarkable pedagogical development has been attended by a political and social advancement hardly less striking. As Marion shows the idea of the rights and duties of the state in matters of education was asserted by Condorcet and Lakanal, forgotton under the Empire, scorned during the Restoration, reasserted by Guizot, and partly realized by his law in 1833; ideally completed by Carnot in 1848; extinguished by the law of 1850; vainly reasserted by Duruy; worked out with enthusiasm by J. Simon, but is now established beyond reach of reaction. The formula "obligatory, gratuitous and lay instruction," simple and familiar as it is in America, marks in revolutionary France the guarantees of social order which the state imposes on its members who hold its lot in their hands, who had long lived under a state religion, and were greatly shocked by the change. Again, education is not a minimum of instruction for a closed class, but the first step towards a complete culture, where all may now freely aspire to all, and where the state must now develop and use all its reserve of living forces. In 1871, when it had already been felt that the role of the school was to be made the instrument of nothing less than national regeneration, details and partial reforms were at first essayed. Geography, then gymnastics, to make better soldiers, were first officially reformed, but it was soon seen that this was naive and that the whole system must be recast.

Industrial training must give taste and respect for labor and manual cunning, and lessons in things must teach to see. Good pedagogic tradition was lost, and mechanism, psittacism and mnémconique prevailed, and still have all the advantages of inertia on their side. To bring the life, active methods, common sense of the few pedagogic elete against the majority and to subordinate the average teacher, to train in liberty which is more than lessons, and to attain in all that simplicity which is either the gift of the strong or the last fruit of experience, to combine the maximum of utility and of education; this was the ideal. *Optima simpliciter* is the formula by which plain and elementary principles have placed the broadest moral training in the place of sectarianism, civic duties above parties, and that in a land of dissention, where every step met with the strongest resistance. In this new school literature, the better principles of the French revolution reappeared, sometimes as if the reform in moral and civic education had been consecrated to them. Eminent leaders brought down the wisdom of the heights of science to the children of the masses in many admirable little text-books, while at the same time the school bred book-superstition has abated in both morals and science. Nothing so disposes to good sentiment as health, and a feeble body is a bad councellor in all moral matters. Military exercises, vacation colonies and caravans, *cantines scolaires*, industrial training, and even the general diversification of types of even primary education to suit the diverse categories of human needs; all these make for hygiene. The great public awakening has stimulated private initiative in many ways and places. M. Tourasse, *e. g.*, after spending half a million francs in the Department of Basses-Pyrénées for prizes for attendance and various lines of excellence, for practical education in foresight, in organizing child societies for mutual aid, and developing association and social life, mutuality and insurance, economy, savings banks, and in teaching arbitration in boy-quarrels, has now given an associate, M. Piche, a large sum to extend this work and to efface the demoralization of misery among children and unfold sentiments of union and solidarity.

We present in the following pages a general view of the organization of primary instruction, which has undergone since 1875 the most radical transformation in the history of education, a transformation which includes a change of administrative policy which is profound, and a recreation that extends to most detail, discentralizes and vastly enlarges the sphere of, and widens and deepens interest and belief in elementary education. Here the reforms are approaching completion while in secondary and higher education they seem to be only

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well under way. In the present number of this journal we treat only of organization and administration, etc., and withhold an account of the pedagogic methods in the various subjects of the curriculum till a later number.

Official Literature on Primary Education and the Press.

Besides the laws in a series of large volumes, and the official reports of buildings down to 1887, the following are the chief sources of information used:

The Dictionaire de Pédagogie is the latest, and with the exception of the ponderous German pedagogical encyclopedia of Schmidt (the total revision of which in a new edition is about complete), the most comprehensive original work of its kind ever published. It is devoted to primary, which includes what we call common school education only. The work is published, in print almost too fine for many eyes, large pages and two columns on a page, and 6584 pages in all, by the vigorous and enterprising house of Hachette & Cie, and edited by F. Buisson, the inspector general of primary education in France. It is divided into two nearly equal parts. The first comprises pedagogy, law, history and administration, and biography, and is the work of 270 co-operating editors. The second part is devoted to the subject-matter of education, and is written by 140 co-laborers, mostly professors and specialists. This great conversation lexicon was issued in instalments, the first in 1878 and the last in 1887. It began therefore while the old organic law of 1850 was in the main still in force in France. Its contributors include most of the leaders in the great transformation of primary education which were almost legion and nearly finished during those years. These changes added zest to many pages while but comparatively few have been made obsolete by them. It is of course a well known work and indispensible in every pedagogical library.

The Statistics of Primary Education in France are published exhaustively every five years. The last of these quinquennial reports was printed in 1889, and brings the statistics down to 1886–7. According to this, the report for 1891–2 will appear in 1894, and will be the fifth since this series began. The last is a quarto of just 400 pages, and like the others published by a special committee of which M. Lavasseur is the head, and which has striven above all to work out a fixed set of schedules and plans. Thus all four volumes form a whole, the first 1876–7, antedating the revolutionary laws of 1881 and '82 making education free and compulsory, those of 1883 and '85 on buildings, and the culminating law of October 30, 1886. This and the

new financial reorganizations will show their results in later volumes. Special tables in the last report account for the 500 million francs expended for buildings alone. This installs this branch of the public service in a way which future generations will not fail to appreciate. In all there were in 1887, 80,209 schools in France, an increase of 3,711 public, and 863 private schools since 1882. The lay public, and clerical private schools had increased at the expense of lay private schools. Private clerical schools in 1887, numbered 9,565. Not including maternal schools there were 5,526,365 pupils, an increase of 185,154 since 1882. The school census was taken in all France on the same day (Dec. 4, 1886, and June 4, 1887,) when the actual attendance was 91, and 88 per cent. respectively of the registration. The budget for primary schools in France for 1887, was 173 million francs, of which 38 millions was borne by the communes. Beside these a resumé of the état, in a smaller pamphlet of perhaps 150 pages, is published yearly. The corresponding report on superior education appears only once in ten years, and the first on secondary education was published in 1889, ending with the year 1887. The quinquennials on primary education are a remarkable record of a remarkable movement.

The method of presentation is lucidity itself, colored graphic charts depicting a mass of details at a glance, the uniform plan facilitating comparison, while the movement is one of the most remarkable in all the history of education. We shall treat these reports more extendedly later.

Recueil des Monographies Pédagogiques. This is a collection of sixty monographs by nearly as many authors, all of whom write over their own names, upon as many subjects, and pretty well cover the field of primary education. It is published by the minister of instruction and fine arts, in six large volumes, containing in all 4,133 pages, and is edited by the indefatigable F. Buisson. The whole was issued in 1889, on the occasion of the Exposition and for the use of jurors, visitors, etc., and forms the second series of *Mémoires et Documents Scolaires* of the Musée Pédagogique. Henceforth says the editor, in presenting it to the minister, it will be impossible to speak of our organization without this work at hand. It is a veritable book of gold for French primary education in 1889, and supplements and rectifies the Dictionaire de Pédagogie to date. It is by far the best source of information.

Revue Internationale de L'Enseignement.

This is a monthly journal now in its tenth year, published by the society of superior education. Its editor in chief is Edmund Dreyfus-Brisac. He is assisted by an editorial

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committee of seventeen, of which Berthelot, president of the society, is the head, and among whom are Boutmy, head of the free school of political sciences, Taine, Pasteur, P. Janet, Dastre, Marion and Bréal. On the whole, this is fairly entitled to be called now the best existing educational journal in the world. Like several other good things in France, the Institute of M. Boutny, the Musée Guimet, the Pedogogic Dictionary, it is a private enterprise. It contains a monthly chronicle of educational activities in France and other countries, particularly in the field of higher education, and prints official documents. It is progressive, well informed, liberal, and justifies the title of being international, even in France. Its digest and criticism of current educational literature is its weakest department. As this is perhaps the field where the most important service can now be rendered, this defect is grave.

Le Revue Pédagogique. This monthly journal was founded under its present name in 1878, and is the organ of the administration. It is however published by Delagrave, 15 rue Soufflot, Paris, and directed by MM. Hanriot & Cocheris. In 1882, it was also made the organ of the Musée Pédagogique (1879). It is not so much an official bulletin or a collection of administrative documents as an open field for free discussion and advanced studies, and is designed also to provoke personal work and to furnish material with which to vindicate all worthy opinions, to be a tribune where the wise can make their testimony and experience heard, and ask their questions as in a sort of permanent universal congress. It is directed by an editorial committee presided over by M. Gréard.

The Department Bulletins. In 1870 there were forty-eight of these. Now every department in France except Oran has one. They are usually sent freely to head teachers who make their contents known to their subordinates. They are the property of the school, and contain important ministerial circulars, programs of conferences, acts of department councils, appointments, instructions of inspectors, educational news of many sorts and often memoirs. All have a local character and most are monthly. They are organs of teachers' aid societies, and have had much to do in developing school libraries and for the academic inspectors are a powerful means of impulsion.

In his excellent article on *the pedagogic press* of France from 1789 to 1889, M. Beurier, the director of the musée pedagogique describes nearly sixty educational journals or bulletins. Most of these have ceased to exist, but "not less than one hundred" have been created within the last ten years.

This includes all educational periodicals, even *annuaires* and society bulletins. Nearly a dozen geographical societies publish bulletins on local geography, and some are by educational societies. The new *Musée Scolaire* (1887) is to encourage science in primary schools. The *Ligue* began in Jan. last, an organ for advancing physical education. Some schools and even orphan's homes publish bulletins. *L'Instruction primaire* (since 1879), represents maternal schools and has 20,000 subscribers. *L'instituteur* (1882), is anti-utilitarian. *Le Progrès* (1882), contains each month a digest of all the chief journal articles on education, and a portrait and biography of some eminent teacher. *La Revue d'Education* (1887), has a theoretical and a practical part and "suggestions." *L'Education Naturale* (1887), founded by P. Best, still treats programmes and teachers' examinations. *L'University (Cerf)* is the organ of the society for the study of secondary education. *L'Esneignement secondaire des jeunes filles* (1882), is the chief and best in the field. *L'Enseignement manual et experimental* (1888, Gédalge), should be named. Besides these journals suited to special subjects, often elementary like *le 'Journal des Mathématiques Elêmentaires*, are others designed for those attending each of the chief examinations. Hardly a great journal of any kind exists we are told, that has not at least a weekly article on education, not to mention those in the monthly and quarterly reviews.

CLASSES OF PRIMARY SCHOOLS.

There are six kinds, as follows:

I. *Maternal Schools.* These have taken the place of the Salles d'Asile. They receive children of both sexes from two to six. A committee of lady patrons may be nominated for three years by the mayor and the inspector whose chief duty is to watch the hygiene of the school. The younger children are brought to be kept while their parents work and the older are taught. Since 1881 the state aids in their support, requiring that they shall not be established in villages of less than 1200 inhabitants, and requiring a second teacher if the number of children attending exceeds 50.

II. *Infant classes.* These have no independent existence but are links between maternal and primary schools, and are annexes now of one now of the other. Like the former these are aided but not required by the state.

III. *Elementary Primary Schools.* Here the obligatory education from six to thirteen is given. The age of admission is varied to five or seven according as there is attendance in infant classes or not. They are for boys, girls or mixed. In the former most of the teaching must be done by

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men and in both other classes by women. Where the population is over 500, girls must have a separate school, and each place with 20 children of school age must provide a schoolhouse.

IV. *Superior primary schools and complimentary courses.* These differ only in that the former have their own building and directors and the latter are annexed to III, and under its directors. The latter can have but two years and may have but one, the former two or more. If three at least they are écoles de plein exercise. Some are professional and are partly under the minister of commerce. To enter either the pupil must have won the state certificate of primary studies, and in both may receive state stipends of all the five kinds later described and including study abroad and secondary studies. The locality is required to support neither, but instruction in both must be free to all, and the state is ready to aid by a fixed and liberal schedule.

V. *Manual Apprentice Schools.* Technical knowledge, and dexterity is the object to be sought by these schools according to their organic law of 1880. These differ from the professional schools above (IV), in being more industrial, in being aided by the budget of commerce, and in so little else that it has been proposed to fuse the two.

VI. The 170 departmental *Normal Schools* to be more fully described later, which with the elementary primary schools are the only ones the creation of which is obligatory. Others if decreed by the locality may receive state aid for a time varying with circumstances.

While the great mass of children attend and most money is expended for III, each of the other classes is important, and all but VI numerously attended. To make the enumeration complete the following kinds of schools should also be described to show how manifold and diversified French primary schools now are:

Country Schools. (Écoles de Hameau.)

These are schools for peasant laborers in remote and sparsely populated regions. They existed legally only since 1867. Although their history is obscure it is probable that these populations have not been totally without schools, for as early as 511 A. D., the Council of Orleans ordered each curé to keep school in these parishes, and decrees and capitularies since have repeatedly enjoined this. The law of 1867 was permissive rather than mandatory. The teachers were bad and the pay very small. The law of 1875 doubled the pay of the "adjuncts" charged with these schools. This placed them above the adjuncts of the ordinary schools and below the titu-

lar teachers of the fourth class. By the decree of 1881, schools of over 25 pupils between six and thirteen ceased to be annexes of more central schools and their chief teacher became an independent titular. It is now recommended that schools below this number be regarded as classes, and be taught by probationers (stagiaires) under the direction of the school in the chief town. There were in 1886, 5,603 of these schools in all France with less, and 1612 with more than 25 pupils each, attended by over 300,000 children. Here we see the weak side of compulsory attendance in France and much as has been done, much more must be done before the obligations to attend can be completely enforced. Often girls attend in the morning and boys in the afternoon. This leaves some children to assist in home work in both parts of the day, and in larger schools quite as much is done with half the number of pupils in these half time schools. School lasts only four or five months in the year. They are practically one class schools although the law of 1882 provides for three courses. The monitorial system has been tried, but children of ten can hardly work this system.

Classes of Adults and Apprentices. In 1883 there were nearly 30,000 adult courses in France; now there are less than 8,000. They were designed for very illiterate persons and under the new system the number of these has declined. The state is now less ready to aid and thus the burden of such schools fall more heavily on the locality. To establish such a course the municipal and then the department council and finally the minister must approve, and the forms and processes are about the same as in establishing a new school. The state now aids only if the course lasts five months, and if the resources of the commune are exhausted. If a public teacher aids, the pay is arranged between him and the commune. There must be at least three sessions of an hour and a half each per week. All pupils must be 13 at least and must have satisfied the law of obligatory attendance and of child-labor. In adult classes each person must have a copy book which must never leave the school in which lessons are daily entered. The inspection here is the same as in primary schools. In connection with these courses the reader is referred to the admirable account of the present state of patronage and the education of apprentices by M. E. Cacheux in the collection of monographs above.

The National Professional Schools. The official organization of these schools was very incomplete before 1880. Higher technical instruction in the School of Mines, the School of Bridges and Highways, the Central School of Arts and Man-

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ufactures, the Conservatory of Arts and Trades and the Agronomic Institute, was well developed as was secondary technical education in the schools of arts and trades at Angiers, Aix and Châlons, the Agricultural schools of Grignon, Grandjouan, Montpelier, the commercial schools, etc. The first trained the leaders of great industries, the heads of large business houses, etc., and the second their assistants and higher subordinates. Although the state had done nothing, private enterprise had not entirely neglected the primary technical training of working men. Paris had its municipal school in the boulevard de la Vilette, and its clock and watchmakers school; Reims had its municipal school of dyeing, spinning and weaving; Nîmes its school of laces and finer textiles; Limoges its ceramic school, while Rouen and Havre had apprentice schools. As the professional value of French skilled labor seemed tending to decline the government undertook to organize a few model schools which should serve as types and encouragement for other spontaneous efforts. In 1881 the first of these national professional schools was founded at Vierzon. The next year two others were established at Armentières, and at Voiron. Each comprises a maternal, or elementary primary and a superior primary school. The lower years were first organized and the higher years of the superior primary courses were installed only Oct., 1889. A local council named by the Ministers of Instruction and of Commerce exercises general surveillance, and suggests improvements. The directors and financial agent who is under bonds are named by the minister as are the custodian of the students an adjutant who has general supervision of the shops and teachers of gymnastic and military exercises. Professors and adjunct masters teach science and literature, and auxiliaries direct drawing, modelling, modern languages and music. The chief of shop work is assisted by foremen. All the instructors are appointed by the minister. The foremen are changed often, in order the better to keep up with industrial progress in methods. There are also directors and assistants each in the maternal and lower primary school. The schools are free to day pupils but boarders pay 500 francs per year. Day pupils bring their dinner which is warmed for them at the school, or lunch is served at cost. A well supervised room is provided for children till their parents return from work. Stipends and partial stipends are provided for children who pass the required tests. In principle those receiving these little scholarships ought to live in the building and usually receive 500 francs. Family stipends yield but 400 francs.

For the maternal schools Fröbels' method, considerably ex-

tended and developed, seems to satisfy the need of children from four to seven. Later comes drawing, modeling, work on woods and metals which is basal. The aim is to cultivate manual skill and to avoid premature specialization. Architecture and ornament come later and all ends and focuses in a special programme corresponding to the industries of the region. At Voiron there is weaving, cement and chemical industries; at Vierzon, agricultural material, ceramics, tiling, paving, etc; and at Armentières weaving and spinning. There are excursions to factories, mills, workshops. At the end of the year instead of prizes are appointments to vacation tours free and often quite extended.

At Armentières the installation embraces 40,000 square metres, of which 11,000 are covered by buildings arranged in symmetrical series, one each for the director, financial agent, the maternal school, the elementary primary, the gymnasium, the infirmary, the higher school, and the shops. A net of telephones connects all. The primary school has four classes of 48 places and 60 square metres each, a covered yard 200 metres square, and a recreation court of 800 metres. The maternal school has a closed play-yard 210 metres square. Class room, saloon with graded seats, court for play with shrubs, etc. In general the basement contains kitchens and class rooms, the first floor dormitories, and the third is for the service. There is a cabinet of natural history, another of physics, and a chemical laboratory. There are three motor engines of 30, 6 and 4 horse power. The weaving shop covers 472 square metres and in it all stages of the industry are taught. There are two other large workshops, one for iron and one for wood, and a botanical garden of 1,000 square metres.

At Vierzon the buildings occupy 8,600 of the 40,000 square metres of ground and are in a series of independent pavilions, each with its own independent service. Here a normal section to educate teachers of manual training was established in 1888. At Voiron the buildings occupy 11,000 out of the 40,000 square metres. In all three of these professional schools there were in 1889, 1,418 pupils. Most pupils become foremen, directors, manufacturers, and a few pass up to the school of naval mechanics at Brest, the school of arts and trades at Angiers, Aix, etc.

Private Schools. Every school, aided however little by the state, is subject to all the regulations of public schools. For schools not thus aided the age of the instructors is fixed by law. The examination and discipline of directors are the same as in public schools, but the former is relaxed for assistant

teachers. The same is true of heads of private complementary courses. Only French men and women can become teachers in public schools. This rule is relaxed for private schools. Aliens, if admitted to civic rights, of legal capacity and age, and expressly permitted by the minister and the department council, may teach in and even direct private schools. No foreign diplomas, certificates or brevets are sufficient till officially pronounced equivalent. Inspectors can enter at any time and inspect text and copy books and question on all they hear. Private schools choose their own methods and text books, barring those interdicted by the general council. To open a private school application must be made to the mayor and posted a month, when it may be opened if he or the inspector do not object. Without this permission the head of the school is subject to fine, and for a second offence to imprisonment. Teachers may be silenced and otherwise punished, and pupils may receive prizes and stipends from the state, as in public schools.

Laws of Primary Education. The principle of liberty in education, although recognized in 1833, was only established by the law of Oct. 30, 1886. By this law all kinds of schools, public and private, may be established subject to certain rules, and the heads of all private primary schools are free to choose methods, programs and books not expressly forbidden by the Superior Council. On March 28, 1882, primary instruction was made obligatory for all children from six to thirteen. An indispensable minimum of knowledge is enforced, which may be acquired at home or in a public or private school. Only the liberty of ignorance is proscribed. This law is executed by a commission scolaire composed of the mayor, a delegate, and members named by the municipal council to the number of at least one third that of the council. This committee prepares annually a list of children of school age. It can never enter the school building nor influence the matter or methods of teaching. They first notify delinquents detected by their monthly inspection of the register and judge the causes of absence, then post their names from two to four weeks on the doors of the town hall, and may bring them before a justice of the peace for police penalties. Appeal may be made by inspector or parents to the council of the department. Even children taught at home must be examined annually, beginning with the end of the second school year, on the matter taught to children of the same age in the public school. If they fail without satisfactory excuse they must be sent to a public or private school, which must be named by the mayor, or the parents name is posted. By the law of

1886, only lay teachers can teach in public schools. All members of religious houses, and all clergy of whatever sect, are thus excluded, and schools made religiously neutral. Läicization must be assured whenever a new school house is erected, and must be completed five years from the date of the law. School curricula are secularized by the same law. By the law of June 16, 1881, primary education was made gratuitous. Thus the sad distinctions between paying and free pupils was effaced. The state thus makes accessible what it makes obligatory. Religious bodies can neither inspect nor nominate teachers, and all religious instruction must be given outside school hours and houses. Morality taught by lay teachers has the first place in French schools.

Obligatory Education. If the local school commissioners have hardly been entirely faithful to the mission of enforcing the law of obligatory attendance, the caisses d' écoles have in great measure remedied the effects of this lethargy. The juries who examine children taught at home—orally only if the written examination is unsatisfactory—although in 1884, when this law first went into effect they examined but 2,864 children, did much to stimulate both instruction and school attendance. In 1888, the commissioners in the twenty wards of Paris met on an average over forty times, summoned nearly 23,000 parents who had neglected to send their children to school, posted nearly 4,000, and had to summon 356 before a magistrate. These commissioners themselves are composed of men too busy, or too ignorant and sympathetic with negligent parents to meet often enough and act with needed energy, and have in many sections practically ceased to exist. A good teacher is the best stimulus to attendance.

Financial Legislation. Expenses are special, as for buildings, furniture and equipment, and stated, as salaries, light, heat, etc. In principle the communes pay all special expenses, save for normal schools, which fall to the department, but may be aided by loans from the state. These had been enormous till 1885, when they were placed on a new basis. Now only communes taxed below a certain value can receive any subvention, which when accorded, may vary between the limits of eighty and fifteen per cent. of the value of the property, and is given in the form of annuities, repayable in from thirty to forty years. The stated expenses, including keeping buildings in repair, are obligatory upon the locality. School money is raised, besides donations and legacies, by a variable per cent. (the maximum of which has been differently fixed by recent laws) of the entire tax paid by the commune. This is one of the new problems caused by making

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education free, that is yet in a very unsatisfactory state, and further legislation is impending.

Funds The commune (or town), the department, and the state, have each an educational budget, and these together make the funds devoted to primary education. The ordinary or current expenses of this part of the educational service of France for 1887, *e. g.* were in total 121,545,868 francs. Of this donations and legacies yielded 561,950; previous levies, four special centemes, supplemented by a special per cent. appropriation, yielded 39,481,506, making 40,043,459 in all by the commune. The state set apart a departmental four centemes amounting to 4,828,755, and added 76,679,659 in subventions, making altogether the above total, which by special expenses was that year swelled to a grand total of 172,900,352 francs. Communes often aided till they were able to own their school-houses. The state can aid in building only when the commune has already devoted to the purpose one fifth of its ordinary resources. In 1887 nearly eight million francs were spent for primary school buildings. School fees in 1881, the last year they were paid, amounted to but little over nine million francs.

Administration and Inspection. At the head of the entire system of education is the *Minister of Public Instruction and Fine Arts.* This is one of the most important positions in the French Cabinet. Next under him, and less subject to the changes of parties are *three directors* of Superior, Secondary and of Primary education respectively. At the head of primary education is M. Buisson, whose admirable report to his government on the American System of Education as represented at the Exposition at New Orleans, is in most respects the best general picture of our system in existence, and who more than any other man has directed the recent transformations of the school system of his country. The minister appoints or names to the president of the Republic inspectors, instructors of normal and heads of all other schools, exercises judicial functions in disputed school questions, executes decrees and laws, issues orders. circulars and instructions himself, and by edicts can annul or modify the acts of his subordinates. He is aided by a *Consultative Committee* in three section, one for each educational grade. Its members in the primary section are usually called to act on age exceptions in examinations, the equivalence of foreign diplomas to those in France, etc. In the superior council are six members elected au scrutin de liste by the inspectors of primary education, directors of normal schools, etc. The council itself, only consultative so far as administration goes, save in disputed and disciplinary matters, is a veritable

tribunal of appeal. The *rector of each academy* who is named by the minister has the primary normal schools in his department especially under his charge. He watches other public schools through the academic inspector, proposes improvements to the minister, approves a list of text-books, and names the examiners for the prizes and stipends awarded to the upper primary schools, and also the committees of patronage. Most other examining boards are made up from his nominations. The rector of the department university finally nominates teachers of whatever rank in public or private schools who show remarkable aptitude for decoration with the much coveted title of officer of the academy, if of higher schools, or of officers of public instruction, if of lower schools. For these rewards of merit the prefect also acts as well as for medals and honorable mention. The department prefect also confers the national stipends in primary schools, but on the basis of examinations. The chief of primary education in each of the seventeen departments of France, is *the academic inspector*. The creation or suppression of schools, and their material and personal installation are in his hands subject only to the approval now of prefect and now of rector. In 1886, and again in 1887, the chief inspector's power was enlarged. He inflicts penalties, even that of revocation of the right to teach, and of controlling the opening of private schools. Under him are the *primary inspectors*, usually one at least for each arrondisement, and are of three ranks as to pay, but most all have passed the same examination especially for them. They can advise but not decide. They co-operate in cantonal teacher's meetings, may attend *ex-officio* all local commissions which have for their sole purpose to enforce attendance, preside at examinations for the certificate of primary studies, and advise on appointments, promotions, buildings, adult classes, savings banks, etc., etc. The *department council* is composed since 1886 of the prefect who presides, the academic inspector, four general councillors elected by their collegues, the two directors of the normal schools, four school representatives, two primary inspectors, and for special purposes, two representatives from private schools, lay and church. Members are chosen for three years and are re-eligible. It notices the observance of programes, medical inspection and reports to the academic inspectors on all matters administrative, pedagogic or disciplinary. This council was profoundly reconstructed by the law of 1880 to give greater influence to university functionaries.

The law of 1886 lodges the power of inspection in *six inspectors general*. They visit primary and most especially normal schools and make special reports to the minister.

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Each inspector general constitutes examination juries for higher school degrees. Besides there are inspectors of singing and music, of manual labor, modern languages and design in normal schools. There are four *general inspectors of maternal schools*, who must be at least thirty-five and named by the minister; *medical inspectors* both communal and departmental; lady *inspectors for girls schools* public or private, who are named by the minister and serve gratuitously and rather superficially; *cantonal delegates* named for three years by the department council to inspect schools in each canton. Each member having entrance only to the schools assigned him, and this inspection extending to building, health, bearing of pupils, till in 1887 they were given power to inspect teaching as well; the *mayor*, who is not only *ex-officio* president of the city school commission, but also of an improvement committee which functionates wherever there is a school of either manual apprenticeship or a superior professional school. For private schools the inspection is far less thorough than for public schools. For all others than the above admissions into a public school is strictly forbidden, save with special permission. Prefects may enter schools in their own domain, but cannot inspect. Only those members of the department council especially appointed for the purpose can enter. Priests and clergymen are expressly forbidden to enter by the law of March 28, 1882.

Training of Teachers in France.

Organization and Administration of Normal Schools.

Before the decree of July, 1881, admitting semi-pensioners and externs all normal pupils were interns. Not only board and lodging, but laundry, care of rooms, and medical attendance are free. The number of meals per day, courses per meal, the amount of bread, meat, wine and beer, wood and lights, allowance for furniture, etc., per student remain as fixed by the law of 1855. Intern teachers as well as the director almoner and head master can eat at the commons table. By the decree of 1881, the director of a normal school for males receives, besides free pensions, 5,000 francs per year, and the lowest teacher 2,000. The many outside teachers are paid from 100 to 300 francs annually per week per hour of service. A local committee of five, nominated by the rector and appointed by the minister, makes weekly visits, receives the annual report of the rector, prepares the budget and advises on all matters. In the same way a professor is appointed economist under bonds to handle the funds of the school and keep its books. The business forms, inventories, accounts of furniture, are often prescribed by the state, and in some par-

ticulars with great detail. In 1888 the head of each school reported the history and statistics of his or her school. These are now published in abstract by departments grouped under the academies which they compose, and altogether constitute a suggestive magazine of facts. The garden plays a prominent part in the rules, recreations and in the culinary administration of these schools.

Lower Normal Schools.

After the "seminary for lay teachers," opened by La Salle in 1684, and the Ecole Normale at Paris in 1795, which drew 1400 students from all France, and was closed by imperial decree in three months, the first normal school in France was founded by local authorities at Strassburg in 1810. This remained the best, long after Alsace, also incited no doubt in part at least by German proximity, had done the same. Other departments followed. Between 1830 and '32, when the state took direction of the matter, fifteen were founded, making thirty-six in all at the end of that year. The course was usually two years. Practice schools were rare, but students taught classes of their colleagues, organized adult courses, or taught in schools of the village. All method teaching was, however, by apprenticeship. There was no ethics, psychology or pedagogy proper. As everywhere, long and bitter discussions followed these attempts to determine the limits and history of education. The academy of moral and political sciences offered a prize for the best essay on the improvement of these schools in 1838, and gave it to one of their severest critics. Minister Guizot could not stem the tide and the law of 1850 humiliated and almost destroyed normal schools. Under the ministry of Duray (1863–7) normal schools gradually developed.

The fundamental law of 1879 organized normal schools on their present basis. In 1889 there were eighty-two normal schools for the training of male, and eighty-nine for the training of female teachers. All are laicized. Two new certificates, one of aptitude for professorship and one of aptitude for directorship of these institutions were created, and two superior normal schools, one for men, at Saint Cloud, and one at Fontenay-aux-Roses, to train teachers for the lower normal schools and for these certificates were established in 1880. Most of these lower normal schools are now installed in new and enlarged buildings, which leave little to be desired in material efficiency. In 1889 there were in all 4,754 male, and 3,647 female students, most of whom reside in the school. Nearly all have practice schools, and most maternal schools also connected with them.

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Superior Normal Schools, Fontenay-aux Roses.

This superior normal school, to train the female teachers of the eighty-nine lower normal schools, was opened in November, 1880. The studies were ordered by an inspector general, and by a high commission. This was an important event, not only in the history of normal education in France, but it was the first time the state had supplied all the resources, and the university had combined its three grades for the higher education of girls. It was a new situation, and brought special responsibility, and had national significance, and excited joyous hope and ardor. About forty-five students here seems about sufficient to furnish candidates for all vacancies in this branch of the educational service. Candidates must be between nineteen and twenty-five; must have the attainment of bachelorship. On an average about one in five is admitted. There are two departments, science and letters, with literature, psychology, morals, pedagogy, modern languages and vocal music common to both. The course is three years, but just now is reduced to two, to provide teachers for new lower normal schools. The annual examinations for promotions are made by the regular teachers, but the final examination, which gives the title of professor, is public, is open to all comers, and is conducted by examiners from a distance, named each year by the minister. For the oral part of this examination the candidate must go to Paris. Nearly all live in the building, and everything, even books and traveling expenses are free, and each is paid annually about 250 francs, but she must pledge at least ten years service in normal work. Each pupil has her room. The liberty here is great, but it is not forgotten that the greater the freedom the more rigid the government must be in matters where control is needed. All night work is forbidden, and all the time after the evening meal is spent in dancing, conversation, etc. The resident staff consists of a director and four repetitorial professors. The teaching is also largely given by professors from the lycées, Sorbonne, museums, etc., who come once a year, or once a week, a month, etc., and whose work is mosaiced together with that of the staff into an admirable course. The lessons are always an hour and a half, and these but one or two per day with practical work. The *répétitrices* teach the pupils how to study and get their lessons with them, and after the classes, complete, review, apply and explain it—in short, give unity to the work of the many instructors who give but a part of their time to the work, and bring home collective work to individuals. There are quarter and half hour exercises in mutual teaching, led by a pupil named in advance, and fol-

lowed by criticism. The same lesson must then be "transposed" or given to a class of children to note the change in form. Subjects in history, French, psychology, morals, mathematics, etc., are given out from one to three weeks in advance, perhaps to groups of from two to four students; and then from one to three hours are fixed within which an essay must be written upon it. Again, a literary, scientific, or moral point is developed, or a mock case of discipline, a class on which each must write a fixed number of lines. By these methods and by translation, etc., the drill in rapid, precise, orderly expression, develops their resources in languages without attempting to make authors. Daily choral song is said to voice the best common spirit of the school, and to be a means of manifest moral education. Two volumes of admirable vocal music have lately appeared, mostly chorals, adopted here and widely used elsewhere, chosen by authors said to have exhausted the field of historic and contemporary song.

Rarely has it been shown what could be done in bettering the manners, habits and language of girls at this plastic age, in two years. One says their entire apparatus of activity is made over by furnishing them with keys to methods and by a new *esprit du corps* inculcated incessently during almost every waking hour, and with every possible application and detail. The devotion of sisters of charity and daughters of the church must be transfused by the enlightenment of science. State visits are made to the schools of Paris under the escort of the state inspector, to be afterwards reported on. In the hour-plan, which requires rising at six and retiring at nine throughout the year, comparatively little time is left for recreation, and the only exercise that falls every day is the morning half-hour conference.

Saint-Cloud.

After a tentative three months course in 1880, a course of one year was opened in March 1882 in a wing of the palace at Saint-Cloud. Admission was made competative and open to all, although at first designed chiefly for the masters of the lower normal schools. Applicants must be between the ages of 21 and 25, unmarried, and must make a decennial contract for future service, at least two years of which must be given to public schools, and must have attained a superior brevet, either a bacculaureate in letters or science, or a brevet of capacity for special secondary education. On graduating they receive the certificate of appitude for a professorship and are at the disposition of the government. The course in science is relatively stronger than that in letters, and there

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are more externs than in the corresponding training school for women at Fontenay-aux-Roses. The work is more directly with the professors and repetiteurs are unnecessary. There is an excellent reading and billiard room. The primary school studies are the basis of work. Excursions to institutions of various kinds and also for botanical, geological and other studies are frequent and are commonly on Sunday. Many notable authors are invited to hold a single conference with the school. Manual training at the forge, carpenters work, modeling, etc., is required for students of science and permitted for others. German, English, and other foreign students are not infrequent among the externs. All must rise at five and retire at nine.

The Ecole Normale.

After the expulsion of the Jesuits from France a lay novitiate for professors was needed to replace them. Between 1762 and 1770 a plan was executed by which the pensioners formerly scattered among small colleges were brought together at the college of Louis-le-Grand. After completing their course in the provincial colleges twelve were brought here by pensions to follow one of three courses, each for three years, ending in a higher degree, and to devote themselves later to higher instruction. The Convention in 1794 established the normal school of Paris with a three months course for teachers who were, in the language of the decree "to put in execution a plan which aims at the regeneration of the training of man." Of the later history of these pedagogic pépinières M. Dupuy in his admirable history seems to have found no record. In 1808 the Empire established the normal school on nearly its present basis. Three hundred young men could reside in the institution. The first year they must pass the baccalaureate examination, the second that of licentiate, and the best might remain a third year for the doctorate. Common meals and frequent religious exercises were enforced. It was thus a natural annex and complement of the Faculties, forming their professors. The Restoration in 1814 gave all who attained a licentiate the title of brevet aggregé and made many other changes. In 1826 a preparatory school was instituted. This checkered history shows a persistent devotion to science that is often touching. It has never had at one time the 300 students at first provided for, and often far less, and since 1870 has been changed less than most other educational institutions in France.

Now the minister of public instruction and fine arts determines at the beginning of the year in view of prospective needs and demands how many shall be received. The best

are selected by competitive examinations, and must be between 18 and 24 on admission. The course is three years. All board and room in the institution and all is at the cost of the state which they must promise to serve by teaching ten years, in return from which they are exempt from military duty. If they wish to become titular professors in a Lycée they must reach the grade of aggregé, and if they are to become professors in the Faculties they must qualify for the doctors examination. Till the establishment of the École des Hautes Étude in 1867 this was about the only institution in France where select graduates of the Lycées could go to study pure science. It has been an asylum where the traditions of good work for its own sake, which seems the motto of its present excellent director, M. G. Perrot, have been kept alive in long degenerate periods. Conferences—each an hour and a half long—and practice rather than stated lectures is the method. Only the third year can the students go out for any additional work they wish in the Sorbonne and the College of France, etc. Its library, composed entirely for its own work, now numbers some 60,000 volumes. A volume of over 400 pages containing a list of all graduates in both its departments of sciences and letters was publjshed in 1884. It has trained many of the most distinguished men in France. It is a unique institution esssentially without a parallel in the world with almost nothing of technical pedagogy in its course but an apprentice school of the most advanced methods of scientific study and research.

Examinations of Teachers in France.

The law of 1881 requires of every teacher whatever a brevet of capacity. It also created special titles for professors in normal schools both high and low. These and inspectors constitute the personnel of primary education. Of M. Jost's interesting history of examination for teachers since 1568 it need only be said here that it shows us that France has had an experience so long and varied that it should at least commend the present well matured plan to careful consideration. The requirements of the present law of 1887 may be thus summarized. To be admitted to examination for the elementary brevet the candidate must be 16, and for the superior brevet 18. Examinations are held in each department in July and October, by a board of seven examiners, two of whom must be inspectors and most of the rest heads of public or private schools. The lower examination is as follows: I. A page is read, then slowly dictated, then read again, and after ten minutes passed in for orthography; II. Writing in

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three hands, cursive, round and *bâtarde*, ¾ hour; III. French composition, letters or explaining a proverb or maxim, 2 hours; IV. Arithmetic and problems comprising whole numbers, surface and solid measurement, 2 hours. This comprises the tests of the first series. The second consists of; I. Drawing a sketch of some object, showing plan section and elevation, 1½ hours; II. A gymnastic exercise from the programme of the primary school, 10 minutes. Candidates should also draw a familiar object, 1 hour, and women must do a piece of needlework, 1 hour. The third oral series comprises; 1. From a pre-announced set of selections one is made the basis of questions on grammar construction, connection of ideas, meaning of words, etc. 2. Questions in Arithmetic and the metric system. 3. Questions on elementary natural history, civic instruction, geography of France, with black-board drawing. 4. Questions and exercises on the musical scale. 5. Elements of natural and physical science, and agricultural education. To each of these last five not more than ten minutes can be given. No one who has not obtained half the maximal mark in the previous can be admitted to examination in the succeeding series, and zero for any item is failure.

Candidates for the second brevet must have already obtained the first, and all their examination must be in the same session but not in the same day. First series:—I. A composition covering two questions, one in arithmetic and applied geometry, and the other in physical or natural sciences and their application to hygiene, industry, agriculture or horticulture, 4 hours; II. French composition, literary or moral, 2 hours; III. Drawing from a model in relief, 3 hours; IV. Composition of 12 lines in a foreign modern language on a simple theme with use of lexicon, 1½ hours. The mattter of the second series is in seven groups, I. Questions on morals and education; II. French language, explaining a passage from one or more works of 23 French authors selected by the minister in advance every three years; III. Important facts and names in French history since 1453; IV. Geography of France drawn on board, and general geography; V. Arithmetic appplied to practical book-keeping, and (for aspirants only) elementary ideas of algebraic calculus and geometry, surveying and leveling; VI. Physic, chemistry and natural history; VII. Translation *ad aperturam librum* of 20 lines from either English, Italian, Spanish or Arabic at the choice of the candidate. Not more than fifteen minutes should be given to each of these groups, and the mark of the two series each on a scale of 20 must reach 30, and one zero is a failure.

In 1888, 10,619 females, and 4,012 males passed the elementary examination, and 2,144 females and 1,346 males the superior examination. In each of these four classes very nearly half of those who attempted passed. The lower brevet is based on the course of the superior primary school, the higher on the programs of the normal schools. Pedagogic methods and Latin were subjects for these examinations till 1887 when they were dropped. There is now much objection to the modern language and requirements, and it is felt that too great uniformity in different parts of France still is required.

Besides the two brevets another examination for a certificate of pedagogic aptitude was instituted in 1881 after various tentatives dating back to 1816. In place of former examinations in methods both theoretical and practical as a part of the brevet examination it was now felt that pedagogics was practical. Thus the new examination could be taken only after two years of teaching.* In 1884 the number who received this certificate in France was 622. It consists of a written composition on some phase of teaching; an half hour oral correction of tasks, and a lesson given on any one of seven subjects chosen by lot. A practical "sprung" test three hours in the teachers own school before the local inspectiors is now enforced. All who wish to be directors must take this new examination. In 1888, 2,581 males and 1,715 females passed all and 1,781 males and 1,083 females passed a part of these requirements out of nearly 14,000 candidates in all.

The certificate of aptitude for a professorate in normal and superior primary schools was instituted on the basis of an examination in 1880 and given a legal existance in 1886. Before this teachers in lower normal schools need pass no examination . They had done good work before but were now permitted on the basis of a superior brevet or a baccalaureate to attest their ability and attainment by submitting to written practical and oral tests. In 1888, 26 out of 129 male applicants and 32 out of 104 female applicants passed in the section of letters, and 21 out of 183 male and 24 out of 92 female applicants in the section of science. This does

* This is consonant with the practice elsewhere. In England an examination of proficiency in the subjects is not sufficient, but to obtain a definitive diploma the candidate teacher must receive two favorable reports from an inspector with half a year's interval between them. In Austria after a normal school certificate of maturity and at least two years of provisional service the teacher must pass a second practical examination before being definitely installed in his or her work. Prussia and other German states have similar provisions.

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not include a far smaller number of partial examinations. In all the examinations since 1880 the per cent. of successful candidates has varied between the extremes of six and forty-two. Regular candidates must be 21 years of age, but those aged 30 and who had taught ten yeas at least at the date of the law might be exempt from part of the examination which all other teachers must pass within five years. The subjects of the full written test, which lasts four conservative days and no one of which is less than four hours, are numerous and include psychology and morals, a foreign modern language, literature and grammar, history and geography. A composition on each subject is the usual form of the written exercise. The practical tests are an half hour lesson on a subject selected by lot, the explanation of a passage in litterature, the correction of a written exercise, a demonstration of a scientific subject. These exercises have greatly increased the efficiency or normal schools.

Special diplomas are given for singing, drawing, living languages, military exercises, gymnastics and manual training. Normal teachers who have passed the general examination above may pass any of these and are paid a small fixed additional salary for teaching these special subjects. Music has been obligatory since 1887. Any one aged eighteen years may be examined in music.

The 87,000 primary schools, and 144,000 teachers in primary schools are supervised by inspectors created first in 1835, and examined since 1845. By the new law, which went into effect September 1, 1890, candidates must be twenty-five years of age, and must have been a normal teacher or a primary director for at least five years. The candidate for inspector in a modern language must have spent at least a year abroad. Candidates for directorships of normal schools must submit to the same tests. Among these are two compositions of five hours each, one on a subject of pedagogy and one on school administration and an actual inspection of a primary, a superior, and a normal school, with a written report, an oral exposition of a passage chosen by lot from works of ten authors, prescribed beforehand by the minister. Between 1880 and 1888, 120 females, out of 228 examined, and 441 out of 1318 examined male candidates had been admitted. Of these only 84 females and 233 males were judged apt. During these recent years teachers in normal schools have increased and other instructors have diminished, till now the former furnish the chief recruits for the rank of inspectors. This is obviously a grave defect, and several remedies have been proposed, but none yet adopted.

In 1881 a new certificate of aptitude for the inspection of

maternal schools was instituted. Candidates must be twenty-five years old; must have the superior brevet, and the certificate of pedagogic aptitude. Hygiene forms a prominent part of their examination.

Appointment, Discipline and Pay. Teachers were appointed by the prefect by the law of 1850, and often from political considerations. Now he still appoints, but can only do so on the nomination of the academic inspector. All directors or masters and higher special teachers are appointed by the minister. The appointing power may also change the place of a teacher's activity. The latter must engage in no other remunerative function. Penalties for teachers are: 1, private reprimand by the academic inspector; 2, censure by the same, with approval of the department council, which fact may be published in the Bulletin; 3, revocation. This is by the minister on advice, and is provisional and subject to appeal. 4, interdiction. This not only effaces the name from the list of public teachers, like 3, but takes away the right to teach even in private schools, and appeal is not suspensive. In maternal schools the lowest salary is fixed by law, and ranges from 600 to 900 francs. In the lower primary schools it is from 600 to 1200; in the upper primaries, from 1200 to 2800; and in the normal, from 1400 to 5,000 francs. In the the lower schools this minimum is increased yearly for a time. Passing the higher examination, a high stand on the list of merit, the obtaining of a medal, etc., increase the pay. In lower schools teachers must be lodged by the commune. The total income of most teachers is thus annually made up of many variables, most of which depend on merit. Pay is in twelve equal monthly installments. The pay of upper primary teachers varies somewhat with the number of pupils, and normal teachers not residing in the building receive more. Special and professional teachers are paid so much a year per weekly hour. Teachers who have reached the age of 55, after twenty-five years of service, receive 500 or 600 francs per year as pension, can ride at half-fare on all state railroads, etc. Honorable mention and medals of bronze and of silver are given. Teachers on the retired list may be named honorary instructors by the minister. On entering the normal school, where all is free, intending teachers must promise to teach ten years at least, and since 1872 have been exempt from military services if the pledge was not broken.

Pedagogic Conferences.

Cantonal conferences were established by Guizot in 1833. under the curious name of *cours de perfectionment.* Teachers were to meet once in two weeks in summer and once in four

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weeks in winter for mutual instruction and confraternity. The law prescribed that the rector of the local academy should name the president. Each member might be asked to rise and give a brief statement of what he had read since the last meeting. These conferences were not obligatory and soon languished. There was little pedagogical science or literature, and material for discussion was scant, and meetings were too frequent. The modern conference rests on the Ministerial circular of 1878 and the order of 1880, making them obligatory in every department. The attitude of incessent research after betterment is indispensible, for every teacher who would avoid routine and improve in his or her profession. Now all must go, but each conference regulates its own work freely. Usually they are cantonal and twice a year. Even in practice work at conferences, teachers of both sexes meet together. The academic inspector, under the authority of the rector, fixes the number of meetings, groups, cantons, makes out the list of topics to be considered, and is responsible for interest in the meetings. He may relieve individuals from the obligation to attend in departments where their extra expenses are not provided for. Now these meetings rob the inspectors of both time and money. Conferences sustain interest and enthusiasm in the midst of the indifference that surrounds the teacher. It is hard for the teacher to realize the fact if his school is slowly declining, still more so to apply the remedy; this the inspector exists to do. Each department has its Bulletin or Moniteur containing all official acts, and all the inspector's instructions to his personnel. But these communications cannot be confidential or individual enough. Certain memoirs are required in some places of masters of schools. Some departments require but one a year, some permit several to unite in producing one essay, sometimes it is optional. Against this requirement it is said that sometimes a good teacher like a good mother can do but not talk or write. These memoirs the inspector must read and either annotate and return, or make extracts as the basis of his own discussions, or grade and classify them by merit. The best ones may be read at conferences. Often a canton or entire department has the same subject, thus general attention may be called to a reform. The same subject to several different cantons is often the best basis of comparing the cantons, and may even be a basis of rivalry. The importance of subjects varies greatly with local needs. At these meetings a resumé at least of all memoirs is read, and an account of all proceedings and all resolutions which must be prepared in advance, are deposited in the pedagogic museum in Paris, and perhaps printed in part in its Revue. Discussion only

enforces previous opinions and is not allowed. Teachers are now well provided with general ideas on pedagogy. Practical questions, often of detail, have more interest, and later those tending to educate the teachers in his subject rather than pedagogy have become most attractive of all. Now that the programs are applied, personal study by the teachers is now the order of the day. Visits to school to see masters teach their own pupils in their own rooms and banquets or "fraternal agapai" between the sessions are lauded new features. In general, pedagogic conferences measure and reflect the degree of public interest in popular instruction, and progress has followed their development.

Pedagogical Congresses.

A spirit of initiative and a zest for discussion, having been awakened by the local conferences, the first national congress was held in 1878 and a long list of more general questions was submitted by the government. Not only primary but higher grades of education were represented; public interest was aroused, and an ideal of manual training as establishing an equilibrium between physical and mental faculties was awakened. There was less discipline on the part of the government than in the local assemblies, and less effort to impress its doctrines and spirit. It appointed M. Gréard to preside, direct and inspire debate, and put his talent and experience at the service of the congress held at the Sorbonne in 1880, '81, and '83. The first and third were for heads of normal schools and one primary inspector from each department. The second was for teachers chosen by double elections, *i. e.* members elected by cantons voted for delegates from the departments. Two to four questions were proposed and were made the basis of cantonal election-agitation which the constituents of the delegates had studied, and which generally had already been discussed in the local conference. Thus sifted through successive discussions these questions were resuméd in the form of final resolutions. Each delegate keeps a book of reforms and wishes and as a result of these meetings these note books become often records of the rectification of local and personal preconceptions. The resume of the work of one of these congresses summarized by M. Gréard may make a volume of value,—a product of joint labor of chiefs and simple soldiers working out problems of mental and moral needs. If these congresses seem official, association with the minister is mutually helpful, and has contributed much to ensure and guide action in parliament or the Superior Council.

Havre has become one of the most progressive and best governed cities in France. It has a vigorous *société de l'enseignment pas l'aspect*. It had sent young teachers abroad to report on contemporary improvements in education. In 1885 it sent out an appeal for an international congress to consider four subjects: the use of pedagogic meetings, normal training, teachers pay and normal schools. Sections were to meet first and then the general congress. The meeting was an entire success, but the government did not favor a permanent organization, or any society or federation of teachers. The government has progressed much faster than the people, and the professors far faster than the teachers; thus the leadership of the former in reforms is needful and salutary. In 1886, the philomathic society at Bordeaux conducted an international congress of technical and commercial education, the printed proceedings of which have much value. A journal, *Le Congrês d'Instituteurs*, founded in 1885, meanwhile made active propaganda in favor of a permanent committee. This and the discussions of the Paris congress in 1887, issued in resolutions that department societies be organized by delegates present at Paris in each department, and that these unite to form *l'Union Amicale des Instituteurs de France*, to organize and make statutes for which a committee of twenty-four was named. The minister opposed this "autonomous professional syndicate," as tending to sedition. Automony in one member of a legal hierarchy of officeholders of the state, he said, would mean anarchy. It savored of mutiny against himself. Other alliances as of inspectors, primary teachers, etc., would follow and thus make a program of disorganization which the government must oppose. This would not be like mutual help societies, associations of alumni, La Ligue, etc. Teachers should not, like working men, combine under other leaders than the government, especially where the latter gives them permanent employment and pensions them in old age. Whatever relaxes the obligations of teachers to the state is sure to weaken that of the State to them. This vigorous protest, and the preparation for the international congress at the exposition in 1889, has now somewhat diverted attention from this question. This congress was divided, not by grade or subject matter of instruction, into five sections: 1. Pedagogy; 2. Professional interests; 3. Economy and prudence. 4. Organization of congresses; 5 Free education. This was left more to the will of the majority of teachers, and its discussions are the most vast, superficial and worthless of any French congress.

School Libraries.

In 1860, measures were taken to establish libraries in primary schools, to be kept by the instructors in the school room in a case of approved fashion, for loaning to parents. At first the selection of these books was supervised by the academic inspectors, but in 1868, this work had so increased that it was intrusted to a permanent committee. This catalogue of carefully selected and approved books had grown in 1887 to 2,594 books on eleven subjects. In 1888 there were in all France 36,326 of these libraries, containing over four million volumes, and having made in the rural districts nearly 46 million loans. There are but 36,121 communes, but large towns have several, and many small country schools still lack there libraries. The total cost has been over eleven million francs, of which the state has supplied but about one-third, the locality the rest. This does not include gifts of books. As the business of bookselling is mainly in the hands of the publishers, and therefore much time and labor would be involved in the purchase by the local libraries of approved books, the administration provides all the books of the catalogue ordered by the communes. These libraries have been a stimulus to authors for whom they make a large market. They contain text-books, gifts from the minister, the prefect, the commune and individuals. Each year the three instructors who have best administered this library, as shown in the annual report, are rewarded by the minister.

La Libraire Scolaire.

In 1817, the commissioners of public instruction selected twenty-nine text-books in seven leading subjects taught in primary schools in France. In 1888, 1,531 text-books in fifteen primary subjects were sanctioned. Paul Delalain, the well known scholastic publisher, protests against too detailed programs as interfering with needful liberty of editors and authors, and against too frequent changes of the school curriculum. A law profoundly recasting the course of study like that of March 28, 1882, involves new text-books and great changes in old plates. Laws compelling attendance have greatly aided publishers.

Pedagogic Libraries.

Libraries for teachers were sanctioned in 1836, but interdicted in 1849. They began to be organized again in 1875, and in 1879 a ministerial order constituted a commission to consider the organization of these libraries. In 1889, this committee consisted of twenty-four prominent educators and the state aid had grown to 30,000 francs. The official cata-

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logue divides these libraries into three parts. I, books on doctrine, principles, philosophy, etc. II, books on practice and application, method in detail, etc. III, works in laws and history. In 1888, there were in all France, 2,683 of these libraries, containing 895,367 volumes. In many places a room for weekly reunions is opened, and the library is kept in the closest touch with the pedagogic conferences. The utility of these libraries is the very highest, and they have won a very strong hold on the teachers, but all are not yet agreed as to the best method of extending them. Some think they should be departmental, and some cantonal, and thus of course smaller, but nearer to teachers. Some advocate free postage for the transfer of these books as in Belgium. Some hold that a few good books covering all the ground required by any examination in pedagogy, in preparation for which these libraries are much used, is sufficient, and some advocate a less number of larger collections of books. The number of loans of subscribers is not now increasing. All admit that these libraries have greatly improved instruction.

School expositions originated with that of the universal exposition of 1867. The same year M. Duruy in a circular letter to the prefects, suggested annual departmental expositions, and before 1870 they were held in nearly half the departments. After the war they were soon resumed. They are often attached to agricultural fairs, industrial expositions, occasions like the inauguration of the Jouffroy statue, local art exhibitions, gymnastic congresses, meetings of geographic and other scientific meetings, etc. Between 1870 and 1889, 129 were held, most frequently between 1882 and 1884. Some are special, as of school-work in geography, drawing, needlework, etc. only. It has been said against them that they cannot represent the real life of schools. That preparation for them causes excitement, diversion, jealousy and deception, But on the other hand they break up issolation between schools, and between families and schools. An herbarium of dried plants is not a living garden, but it offers its own peculiar facilities. Despite the perturbation and perhaps disorientation the indelicacy, and even charlitanry often charged expositions may be made a touchstone of comparative merit, and have not only pedagogic, but even scientific value. The daily work of an entire class, and not the best work of the best members should be shown. Writing, drawing and other work should be sampled for the same pupils for a series of years, as a sort of school biography automatically measured. Besides the work of pupils, curricula, ground plans, the pedagogic work and progress of teachers, school furniture and illustrative apparatus, buildings, heating, ventilating,

lighting system, and administrative documents of all sorts may each be made the subject of a special exposition. It is now held that once in four or five years is often enough for a general local exposition, and they are now becoming less frequent but better.

French Pedagogical Museums.

To become scientific, pedagogy must be studied comparatively. This necessitates collections of text books in each subject, reports, laws, etc., of each nation, school furniture, supplies, etc. In England the idea was first inspired by the exposition of 1851. South Kensington now has 40,000 volumes on education of all orders. Upper Canada followed in 1856 with a collection at once agriculturial, industrial and artistic. St. Petersburg founded one in 1864 which not only exhibits but examines, selects and aids in the economic manufacture of the best books and illustrative apparatus. Washington followed in 1867 with collections and studies chiefly statistical. Other important museums were established as follows:—Rome, 1874; Zurich, 1875; Amsterdam, 1876, (founded by a society of masters of schools); Paris, 1879; Berne, 1879; Bruxelles, 1880, (for all grades); Lisbon, 1882; Madrid, 1884, (loans books, models, etc., and gives two prizes for competitive examinations in: 1, pedagogic studies; 2, improvements of school material); Tokio, 1877, (which buys and tests instruments for the schools in physics and chemistry, and spends twenty thousand dollars per year); Melbourne, 1890.

The library of the French museum is adapted to aid teachers to prepare for all primary examinations, and also for scholars who wish material to write upon these subjects. One room is set apart for a loan library, one to periodicals, one for French laws and administration, one for foreign documents, one to copy books and pupils' work, one for recreative reading and one for duplicates. A large room is set apart for geography, for natural history, physics and chemistry, model school laboratories and museums have been made, and three rooms are for an upper primary school room, needle work and a maternal school respectively. In all, the museum has thirty rooms. It is open twice a week to the public, and every day to those who have a working card, of which in 1888, 280 were given out. Entire normal schools from the provinces visit it. A director, a librarian, a catalogue an editor and a curator are constantly employed, and the annual budget is 40,000 francs. A council of control of twenty members presided over by M. Gréard meets every three months. About 50,000 books, pamphlets and manuscripts, including 670 rare re-

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served works, are arranged with wonderful convenience,and catalogued in 103 little subject catalogues, the same work being often entered five or six times. The museum contains between five and six thousand instruments, models, etc.

It is not a simple conservatory, but a centre of action and impulsion. It has created scientific education in primary normal schools. This was done by a catalogue naming series of objects in thirteen different branches of science. Two copies were sent to each school, in one of which the objects the school had or could get, were checked off, and it was returned to the museum, which supplied the defect. These objects were of course made the basis of the teaching programme, as this catalogue was a sort of compendium of physics, chemistry, natural history, etc. The change was great and very inexpensive. So too a typical herbarium, a type set of designs, and even fruits to be grown in normal school gardens have been elaborated. In the museum itself model manipulations and not lectures ex-cathedra are illustrated. In physics are 20, in chemistry 26 tables, each a chapter in the subject. Two pupils at a time work in turn at each of these tables perfectly and ideally equipped with gas-motor, apparatus, chemicals, etc., by the co-operation of professors of the higher institutions. A noble list of instructors from many institutions also prepare candidates for the certificate of pedagogic aptitude in literature and French history, geography and philosophy by conferences designed to increase the candidate's knowledge, and at the same time to be models of exposition.

The museum is a centre of information and a source of direction for the lower schools of the entire country. Its organ to the *Revue Pédagogique*. This monthly publishes all important debates, laws, decrees, records of commission and often unofficial private papers of value, and keeps the plates so that on occasion of new committees, or debates a monograph on the subject can be brought out at once. Even the *Journal Officiel* strikes off and turns over to the museum all the forms it desires. These special publications (*Mémoires et documents scolaires du Musée Pédagogique)* fall under six classes: 1, legislative; 2, administrative and special orders and organic laws of institutions and grades; 3, modes and methods of instructing in different subjects; 4, historic; 5, calalogues; 6, miscellaneous. Over one hundred separate reprints have been issued besides the exposition monographs —making a very valuable pedagogic library.

Les Musée Scolaires. Montaigne, Rabelais, Fénelon and Rollin protested against the abuse of abstractions and advocated an education in things instead of words. Not counting collections of miscellaneous objects, nor special collections in

which scientific completeness has been sought, but only those classified and labeled, and such as to make lessons in things the basis of all teaching, there were established in France, between the exposition of 1867, before which there were none, and that of 1878, 148 tolerably complete school museums, only ten of which were for girls, and all by the initiation of teachers. Owing to the great impulse of 1878, the lectures of Madame Pape-Carpenier, and the government favor, these increased at the average rate of about 1200 per year, till in 1889, there were 13,034 tolerably complete museums in primary and grammar schools, and many more partial museums consisting of collections of vegetables, minerals, etc. For the official tabulation of these France is not divided into the administrative agricultural academic departments but into the ten regions of M. Levasseur. These methods of intuition have grown, partly because the government has not attempted to control them, till now Director Serrurier of Havre says that there is no school in France, however humble, that has not one or more collections as a basis for lessons in things. Sometimes these object-lessons are remarkably furnished. In linen, silk and cotton, *e. g.*, every process, from the raw material to the finished product, is shown on tiny apparatus as three lessons illustrating the transformation of matter by man. The total expense of all has been but 17,000 francs, and most of that has been bourne by the communes. These museums must never be bought, but collected with the aid of parents and citizens. Pupils should always have a few things in mind that are wanted. Things should be made clumsily though it be, rather, than had or got. These collections comprise, 1, *foods*, animal and vegetable, of many kinds, spices and common drugs, salt, etc. These are a basis for all sorts of information on the habits or anatomy of crabs, oysters, fish, game; on processes, as of butter, cheese, jelatine; on many kinds of plants, seeds, fruits, sugars, drinks, etc. 2, *Dress*, of animal and vegetable origin, colors, dyes, etc. This includes such things and processes as are suggested by silk, wool, cotton linen, hair and fur, rope, twine, cochenille, indigo, cocoa, rubber, soaps, analines, leather, etc. 3. *Dwellings*. Here come building woods of many kinds, stones, earth, metals, plaster and cement, oils, resins, many methods and materials of illumination, and heating. 4. A miscellaneous department, in which come such things as papers and printing, lead and plumbing, good and noxious plants and animals, birds, insects and reptiles, etc. All this makes the school and its work loved; makes thought and language clear and expression better, and if the objects do not do for each child what the apple did for Newton, they awaken the habit of in-

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vestigation. The collections are classified, labeled, catalogued, and arranged in order in a case, which stands between a case for teachers' and one for scholars' books, whether with glass or opaque doors is disputed, must vary with the locality, and it must be made the basis of excursions to the field, store and factory. It must also fit the programme, and must never be complete or finished. The government has collected a mass of testimony from teachers which is strongly and with remarkable unanimity favorable. In addition to this the admirable "society of education by seeing" has a great variety of charts and designs and 5000 select magic lantern views which it loans to schools in other parts of France. A standard collection of objects and material and apparatus, mostly in chemistry and physics, has been made out and can be had for very moderate cost. Historical tables like those of Deyrolle, charts of anatomy and physiology like Regnards, tables of astronomy and geography like those of Fr. Hément, of natural history, like those of Ch. Delon are used. The apparatus of Laverne present still another side of this work.

In 1880, a distinguished committee was appointed to report on art education in schools. This work, summarized by Ch. Bigot, covered schoolhouse decoration, the distribution of casts, and the economic organization of little museums of works of art, to be made accessible to as many of the 60,000 schools and 6,000,000 school-chidren, of France as possible. No attempt was made to represent the history of art, but a few works, the merit of which was consecrated by universal admiration, were selected. The set of typical art objects for boys was somewhat more austre than for girls.

The certificate of elementary primary studies.

As early as 1854 certificates marking four degrees of merit in each subject were given to children leaving the primary school. These were coupons detached from stubs kept in the communal archives. This was intended as a weapon against illiteracy, but was either given to all or neglected. In 1867, Duruy addressed a recommendation to Rectors urging that it be given in new form only to pupils who passed a rigid examination, and be used as a recommendation to employers, etc. The mayor and curé who must attend the examinations were too sympathetic, and the certificates came to have no value because never withheld. This only a less local committee composed of teachers and strangers could reform. The department of Vosges of its own initiative first made this examination effective, arresting premature desertions from school in 1866. Teachers were cautioned not to neglect younger classes in

preparing the little candidates, and every effort was made to avoid special preparation. This institution was recognized by a decree in 1880, and given a legal existence in 1882, by a law which admitted pupils of eleven to this examination, which is two years before the termination of the legal school age. This age seems to many too early, as the best pupils now leave school at eleven, and may be received into the superior primary school or into the complementary course. The character and standards of this examination vary in different departments and it is used by inspectors to give a local color to studies. The number of candidates is now so great that some now urge omitting the oral part. These examinations have been said to cultivate vanity and cram and undue stress upon subjects thought to be important. If passed by but few, emulation would be great, and some have urged that the names be published in order of merit, that prizes be offered for competition. This would of course be pernicious. The teachers' pride should be to present the most pupils and not the best for such a test. On the whole and in fact, however, the institution works well and stimulates both teacher and pupil. This modest diploma adorns the walls of many humble dwellings, and is commonly regarded as very recherché, as almost a title. In 1888 nearly 72,000 certificates were conferred in twenty departments.

Government prizes and stipends to pupils and teachers in lower schools.

Although education was made gratuitous in 1881 a special fund in the budget is devoted to the aid of individual pupils. This sum grew from 42,000 francs in 1878 when it was first established to 954,000 francs in 1889. Till 1887 the successful candidates were appointed directly by the minister. Since then, conformably to the policy of discentralization, the departmental prefect and inspector appoint. Success in written and oral examination is the first and chief basis of appointment; but service rendered to the state by the parent, poverty and the number of other children in the family are also considered. Children must be between the age of twelve and fifteen. Each stipend or *bourse* lasts three years, and varies from 100 to 500 francs per year, according as the student lives at home or boards in a family or a school which must be in the same province. Most are placed in the so-called superior primary public schools; a few may be transferred to Lycées, or even to private schools. The latter are now permitted to send competitors for these stipends. Local committees of patronage, mostly of ladies, often organized to look to the social and personal well-being of individual stu-

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dents, especially when they leave school, care particularly for these select youths, who must report by detailed schedule in writing to the visiting inspector once a year. The schools to which they are sent are chosen with care, are honored and stimulated by the choice. Each school is required to maintain relations with every student after leaving, and by societies, by annually published catalogues, etc., to bind former students to each other and to the school, which is thus made the hearth of a large family who are all proud of a fellow member who achieves distinction. Between 1880 and 1889 over 18,000 children had been inscribed for these examinations, and 5,520 approved, of whom more than one fourth were girls. Of all these, twenty-one per cent. have entered or will enter the trades; twenty per cent. manufactures; sixteen per cent., mostly girls, return home; eleven per cent. agriculture; nine per cent. teachers; five per cent. government service, etc. It is too soon to judge of the merits of the system. By the method of selecting by successive eliminations far more are stimulated than receive the prizes.

In 1883 provision was made to send a few brevet pupil teachers to study at the normal school at Küssnacht, Switzerland, to better fit themselves to teach German. Out of 25 candidates for examination, six were sent on these travelling schollarships, and paid 100 francs per month by the state and their travelling expenses. After five months inspector Jost visited them and brought back so good a report that the minister planned an international exchange with neighboring governments of normal pupil teachers. Meanwhile others were sent to the Austrian normal school at Eger, to Dresden and to London. In 1885 eleven graduates of upper primary schools, and nine normal professors (six to Germany three to England) were sent out. In the same year the government appointed a commission of twelve persons headed by M. Bréal to look to these foreign scholarships, which involve some responsibility, as the upper primary graduates are only from 15 to 18 years of age. They must be placed in teachers families, they and the families watched, and must stay in the same place for two or three years. Finally pupils not intending to teach foreign languages are sent to foreign commercial schools for a year, after which they must if possible enter a foreign business house. The best of these foreign scholars often write valuable papers which have been often published in the Revue Pedagogique. Nearly 300 letters per year must be written to them by the inspector. They are often importuned to teach French in the foreign schools where they go but must neither do so nor speak it. They must not return to France for more than two weeks during their term of ap-

pointment and are advised after it is ended to go back often during vacations. After the normal professor returns he receives 100 francs per month till he finds a place. Several provinces and chambers of commerce have more lately sent pupils abroad competitively to study trade and manufacture, etc. In 1887, the state finally sanctioned and adopted these methods as a distinct part of the national system.

Caisses des Ecoles. By the law of 1867, the municipal council could, with the approval of the prefect, create a local fund to encourage and facilitate attendance, by means of reward to the diligent and aid to the poor. In 1882 these were made obligatory upon all communes, the government coming to the aid of the poorer ones. These expenses were so great that in 1884 the state ceased to furnish aid, and some communes allowed these funds or banks to lapse. Thus the number of them fell between 1883 and 1887 from 19,000 to less than 17,000. They are supported by gifts, legacies, fairs, city aid, etc. The teachers usually administer the fund gratuitously. It is under the control of the school commission.

Caisses D'épargne scolaires. Legal authorization is given to minors to open accounts in this national savings bank without the intervention of parents or guardians, that they may acquire habits of foresight and economy. These institutions are free and voluntary, and owe their popularity to the zeal of teachers. In 1887 there were 22,000 of these institutions, with a total sum, deposited sou by sou, of twelve million francs, The state postal and telegraph service offer special facilities to simplify the work. The method is as follows ; At a pre-appointed time each child is given a bulletin on which it records its name and pastes postage stamps for the purpose given by the teacher in return for its money. When the bulletin card is covered with stamps, which must equal at least one franc (the least deposit received), it is sent to the post and the pupil receives a book in which the first and all later deposits are entered.

Societies of Primary Education in France.

The oldest of these is the *Society for Elementary Instruction* founded by de Gérando, Say, F. Cuvier, and others, in 1815, who introduced the method of mutual instruction from England, and created five free schools at Paris. This society first introduced music and gymnastics into schools, and founded the Orphéon. The teaching of geography, national history, linear drawing, Sunday schools, regimental schools of the navy, manufactures and prisons, as well as popular, communal and pedagogic, were all introduced by it. Its monthly organ, Journal d'Education Populaire, founded in 1815, has

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now seventy-five volumes. In 1831 the government recognized it as "of public utility." This society has in all conferred over 30,000 rewards to teachers in maternal schools. Of these 10,000 were honorable mention only, and the rest were medals of four kinds and prizes, ten of which were 1000 francs each. Sixteen hundred publications by teachers have been rewarded. Three degrees of examination were instituted in Paris some years ago, in order by competitive prizes to keep the best children longer in school. In 1887 about seven thousand children took part.

The Protestant Society for the Encouragement of Primary Instruction was recognized in 1829 as of public utility. It too has its special agents who place its funds wherever they may be most useful. Guizot himself, the author of the famous law of 1833, was a member. It has founded and sustained 1,300 schools of its own, and established the first normal school, that for men at Courbevoie in 1846, and that for women at Boissy-Saint-Léger in 1855, and aided the model schools of Meuse (Isère), of Dieulefit (Drôme), and of Fenestrange (Meurthe). Since the supression of religous instruction in public schools, this society has employed a part of its funds in giving religious instruction on Thursday (a day left vacant for the purpose of religious training for children of such parents as wish it), of children of protestant parents.

The Polytechnic Association was founded in 1830, just after the revolution of July. Those from this school who had been in the war generously offered to teach their companions in arms. Auguste Comte, Contrat and Guibert were among the first volunteers. The association was saved from a fatal schism caused by St. Simonism, by Arago and others, and simultaneous courses were established in 1834 at the Sorbonne, St. Mary's cloister, and at the mayorality of Petïs-Péres. Now too a few Professors, not from the École Polytechnique—doctors, lawyers and graduates of the École centrale,—entered the association. In 1837 it began to decline; in 1848 it was split by an election quarrel; in 1854 its collection and its Halle aux Draps were burned out, but restored by Perdonnet It was recognized as of public utility in 1869. Since 1870 it has grown rapidly, and has many out-lying societies under its patronage. It now has twenty-one central courses at Paris, in some of which each evening upper primary instruction in science and letters are given, with occasional professional courses added, such as that for plumbers at their syndical chamber, for the ceramic school at rue Fromont, and at Levallois-Perret. Each section is directed by a delegate, who names the instructors, and all the delegates compose the council.

The Philotechnic Association split from the above in 1848 to give still more practical courses. Its object is to give free instruction to adults of both sexes, in what pertains to their vocations. It is composed of instructors who teach gratuitously, of honorary members, and of subscribing patrons of two classes, those paying 100 and those giving 1000 francs per year. It is controlled by a council elected for two years, of patrons and professors in equal numbers, with an executive secretary. Its courses in the various parts of Paris are adjusted to the needs of the section. Each has a director, who reports monthly to the council. The professors are entitled probationers (stagiaires). Those who show superior capacity at the end of the year are given diplomas by the council as titular professors. Much pedagogic and demonstrative material is kept at the central home of the association, and a monthly bulletin is published. At the annual commencement at the Trocadéro, and presided over by the minister of education, there were last year 538 laureates, and 233 of the prizes were given to women. Certificates for seven lines of work are given. There are now 25 sections and 367 courses. Ten sections are reserved for adult men and eight for adult women. There were in all 7,722 pupils in 1888. The courses are electricity, book-making, mechanics, insurance, etc. The city council gives each year 15,000 francs, the minister of education 4,500, and the minister of commerce 8,000 francs.

La Ligue Française was founded in 1866 by I. Macé. Its object is to establish schools in rural communities and in the colonies. It is a federation of societies, or local circles, each essentially independent, in the larger cities. In 1870 there were 59 circles, 18,000 members, and a budget of 70,000 francs. A new régime began with the government approval in 1880, and the congress of the ligue in 1881. A council of 30 members publishes its bulletin and directs its work. There were in 1889, 1,298 of these societies under various local names. It is now sought to found an education society in every small town. In 1872 the Ligue obtained a million signatures to a petition for education that should be free, obligatory and lay.

The General Society of Teaching and Education was founded in 1867 to discuss all educational questions from the point of view of pedagogy, society and religion, to scrutinize textbooks and methods of examination, to aid and advise teachers in all legal matters, and to assist schools conducted in a Christian spirit. It has about 100,000 francs per year, half of which was distributed to 450 schools in 1887. It opposes free obligatory and lay instruction. It is aided with funds

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by diocesian committees, has its monthly bulletin which ably covers the whole field of Catholic education.

The French Young Peoples' Union grew out of the war of 1870, and began its work of popular education in 1875. Members must be under thirty. There are now about 1,500 members and 300 professors and 8,000 pupils. The minister, city council and council of the Seine aid it. The society is a union of high and low, rich and poor to make educational propaganda, for economic, and political rather than for scientific knowledge. Hygiene, history and geography for working men, the elements of civil and commercial law, and the great works of literature are its material.

The French Alliance was founded in 1883, and has grown from nine members to 15,000, and extends now to all the French colonies. Its annual budget is 80,000 francs, and it has spent 100,000 francs in medals, prizes, books, etc. Its object is to diffuse the French language in the colonies and in other countries. Its resources are gathered by a general secretary and general committee of propaganda, and distributed by an administrative council of 50 members elected in the general assembly. In the department it has 50 delegates and 40 local committees of propaganda. In Algiers *e. g.*, where but 10,000 of the 400,000 children attend school, the Alliance began by distributing prizes ofbooks, and then founded little libraries, then gave medals to the best native teachers. There are now four committees and 1,382 members in Algiers. Active branches exist in Senegal and the Soudan, Madagascar, New Caledonia, Greece, Egypt, India, China, Japan, Guyana and in every country in Europe. In the United States there are many branches (New York City, Providence, Chicago, Washington, Louisiana, California, etc.). In 1887 these societies were visited by M. H. Boland from the Alliance who reported their touching fidelity to the French language. Canada, Mexico, Central and So. America also have many active societies. The *Bulletin* of the society is read in all these branches where the hope of seeing French become a universal language without abolishing other national languages is ardent. The Alliance is entirely unofficial, and private. As the propagation of the French language is in a sense the key to the foreign markets, the Alliance is related to commerce, although its activities have been essentially disinterested and are in a sense the mission work of French patriotism.

Associations of former pupils of Normal and primary schools. There are fifteen associations of normal graduates, the oldest of which was founded in 1868. Some of them have statutes approved by the government. Their purpose is

moral and pedagogic but they differ considerably in their purpose, spirit and methods. They aid orphans, give prizes, examine and report on text-books, and construct their own communal list, establish libraries and publish bulletins. These clubs are divided geographically and not by the institutions where the members studied, and are conducted by an executive committee elected usually for two years. They all unite in a general assembly. At the annual banquet old and recent graduates from different institutions meet as in a great pedagogic family.

The associations of former pupils of upper primary schools are of course far more numerous, and represent individual schools. Mutual aid is a far less common or prominent object than to attract pupils to the school and to aid it in competing for prosperity with others and to aid former pupils. The minister recommends the formation of similar societies for higher schools.

The orphanage of French primary education was founded in 1886, but local private organizations for the same ends existed before. It adopts and educates orphans of former members. The minister of instruction is its head, and its home is in Paris, 16 rue de Tournon. It has an annual general assembly, publishes its Bulletin, and has branches and members in every department.

Teachers Mutual Aid Societies. Although the first of these societies was established in 1843, it was not till 1858 that they began to be founded in any considerable numbers. Between 1858 and 1863, 26 were established. They were the product of a spirit of fraternity, and the minister urged the formation of more and drew up model by-laws. Between 1864 and 1866, eleven more were founded mostly because of the ministerial appeal. Between 1866 and 1886, 44 more came into existence. The object of these societies is to aid the sick, widows and orphans, to pay doctors' fees, and funeral expenses. The maximal age of admission varies between the extremes of 30 and 55 years. Orphans are aided from three to 14 or even 18 years. Besides participant members there may be honorary members who are not teachers, *e. g.*, a benefactor, a doctor who has treated members gratuitously. Some of these societies have a special system of retiring pensions, care for the property of orphans and have savings departments. All payments are made by a carefully calculated scale, and the work of these societies is so manifold yet so well conducted that intelligent membership is of itself an education.

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NOTES.

Thomas Jefferson and the University of Virginia, by HERBERT B. ADAMS, Associate Professor of History in the Johns Hopkins University. Published by the U. S. Bureau of Education. Circular 1, 1888, pp. 303.

The University of Virginia was the first attempt to transform the Colonial college into something better and higher. It represents the union of religious interests and the support of higher education by the State, and the centralization in university education, and discentralization in preparatory and common schools. The latter, Jefferson thought, should be supported by local taxation, and school wards, like military districts, should have as entire control of primary schools as of roads and bridges, and the former by the state. He devised the plan now in operation in New York, by which gifted boys are aided up to Cornell University, in a way which would save us from the over-education of mediocrity and the under-education of genius. Washington advocated a national institution "to educate our youth in the science of government." Jefferson struggled fifty years in the "holy cause of the University" before it was established (1819) on a solid financial basis. The letters, reports, laws and inquiries about the university at Virginia, touch nearly every great question in the field of higher education so far as then defined. His ideals however, came from a study of French institutions more than any other. He anticipated many of the soundest of modern views such as the desirability of a non-sectarian basis for higher education in the study of the language of the old and new testament as the best basis of a theological training, student self-government, the importance of history, politics and economics, and of technical training, etc., the elective and the group system, the granting of degrees by courses, and not for four years residence, etc. The University of Virginia is the lengthened shadow of one man. Even the unique building plans were from Jefferson's own hand, and he trained his brick-makers, carpenters and masons, and taught them to put on a tin-roof. The Pantheon, the theatre of Marcellus, the temple of Fortuna Virilis were reproduced in part in reduced size.

Jefferson's first idea was to develop the course of his Alma Mater, William and Mary college. At one time he discussed removing to Virginia the entire Swiss faculty of Geneva. Quesnay's Richmond Academy was far more actually realized and built in 1786 supported by French capital, closely affiliated with the French Academy, and less closely with the royal societies of London, and other learned bodies in Europe, with twenty-five resident and one hundred and seventy-five non-resident associates. The United States Academy was to establish other American branches, and exploit the mineral and other natural products of the country, and Paris experts were to teach American youths, and act at the same time as agents for governments and joint stock companies. Quesnay made diligent propaganda in this country and in France, and raised 50,000 francs, and had his scheme been fully realized, our mines would have been controlled by European capital, and our forms of culture, than which nothing is more enduring, might have been as French as Canada was Jesuit. The building was finished, many of the most distinguished Americans and Frenchmen were enrolled as members and associates, one professor appointed, and the project seems to have found favor in Europe. But the French Revolution was im-

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pending, the building was turned to other uses, and at last the great influence of French philosophy in Virginia and the Carolinas was slowly undermined by a current of Scotch Presbyterianism from Princeton College.

Jefferson's ground plan for education in Virginia in his original bill of 1779, was free schools for both sexes with the use of reading books containing only history, and all education chiefly historic. The talent always latent in the common people was to be sought out and educated freely up through the university, on which the state should focus its chief care. Culture always begins with the higher education of the few and lower forms proceed from these. Virginia like New England began with classical schools and colleges. Although Jefferson believed ignorant masses to be the chief danger of republics, he would not force any locality to maintain schools, but the southern county was the unit which he could not break up into wards or towns for his purposes.

Nemours a French visitor, wrote a plan which broke away from all historic university constitutions and faculties, and "Washington was to be the centre with four great professional schools, and a grand palace of education second in splendor to only the capital itself, containing library, museum, rooms for a ministry of public instruction, etc. This extravagant scheme showed how state education was in the air.

Jefferson's idea of a curriculum changed much. He would have only branches likely to be useful and weed out from Bacon's scheme of human knowledge all others. There should be no theology, but ethics should be prominent. His original three groups was later arranged as ten. Men of sense and science combined, he would lop off as nugating somewhat as he strove in his revised code to simplify the verbose and intricate style of English statutes. He would establish democracy upon a philosophic basis avoiding all revolutionary French schemes. Classics and mathematics was the best of all training. His friend Cabell worked in the legislature for appropriations and for the aid of the so-called literary fund, (which had been set apart for educational purposes from certain escheats and forfeitures.) while at the same time local subscriptions were taken to develop Albemarle Academy. There was great opposition to all centralization; the non-sectarianism of the scheme was branded as irreligious; William and Mary College fought for its life; many had little belief in education. Jefferson urged that only education had raised white men above the aborigines, and that his university was to be above the college, and he gradually worked out the unique plans of buildings, now realized in brick,—long low buildings consisting of rows of students rooms opening into a long covered walk, with every few rods a professor's house rising a story higher. Two rows of these buildings face each other, separated by a lawn, and back of each row is a second series of buildings for more miscellaneous purposes. At the head of the central lawn is the pantheon-like library building. These rows might be both multiplied and prolonged and thus the academic village might be extended indefinitely. Jefferson personally watched the details of erecting the buildings, sometimes through a telescope from his Montecello house. When he died in 1826, nine years had elapsed since the calling of the first professor, and two years since the state had freed the university from debt.

Here the story of Dr. Adams ends, and the last half of the volume is devoted to the later history and influence of the university which is better known with six or seven other Virginia institutions.

Few institutions have exerted such an influence during the first half century of their existence. Its eight schools expanded to thirteen at the time of the civil war, and now number nineteen, of which twelve are academic and seven professional. Each student must elect at least three schools and is given the title of graduate of each school whose

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course he completes and stands examination. Before the university was established, about half the students of Princeton were Virginians, and Jefferson thought more than a quarter of a million dollars were carried abroad by students from Virginia annually. There was almost no basis of primary and intermediate education at first, and this has largely been supplied by growth downward. It has been the leader in southern education. There is no president, but a professor is annually elected chairman. There are no classes in the common sense, and length of residence has nothing to do with obtaining a degree. The discipline is chiefly in the hands of the students, who punish, sometimes by expulsion. Cheating in examination or any flagrant form of lying or dishonor, espionage, trickery and rowdyism are remarkably rare. The term has almost no break from October to July, and no Saturday holiday. There are 232 working days in the academic year, a number perhaps without parallel in the world. There is a permanent fund of nearly $300,000, and $40,000 per annum from the state on condition of receiving Virginia students without tuition. Nearly three-fourths of a million dollars have been given for various special purposes, mostly since the war. The German system of giving the professor the student fees for his own courses was tried and abandoned. A chaplain is elected by the professors for a term of two years each, from the three leading denominations of the state in rotation. It is doubtful whether so much or so valuable writing and research per professor was published from any other faculty during the forty years ending with 1880.

We have had no example in this country of what an university could do for a state, so analogous as this to what her educational system has done for Germany. Both are systems that concentrate the intellectual light and send back the intensified rays over the land. Outside the state its spirit and methods have been dominant throughout the south, and its influence upon northern institutions has been far greater than commonly known. We shall perhaps never know how much the Harvard elective system, and the present voluntary and rotating chapel methods, as well as those of Cornell, the new scheme of measuring work by courses rather than by a four years residence, the Amherst device of student self-government, the Johns Hopkins group system and seminaries and other advanced methods, the present change at Columbia, may have been due to, or affected, consciously or not, by this unique institution and by the wealth of educational thought of its great founder.

The College of William and Mary, a contribution to the History of Higher Education, with suggestions for its national promotion, by HERBERT B. ADAMS, PH. D., Associate Professor of History at the Johns Hopkins University. Circular of Information of the Bureau of Education, No. 1, 1887, pp. 89.

In 1619, the Virginia Company, made a grant for a University at Henrico, to educate Indians. This sum was augmented by the bishops. Again, in 1624, an island near Havre de Grace was granted. In 1660 the Colonial Assembly voted to establish a college. In 1691 a charter was obtained, and a grant of money and land was made. Tobacco was taxed for its support, and it was given the control of land surveys, income from which it retained till 1819. The motives of all three beginnings were piety and religious propaganda. Hugh Jones, an English clergyman, who became a professor of mathematics at the college, proposed, among other changes, a training school for the civil service of the colony. As the college controlled surveying, its graduates should be appointed county and secretaries' clerks. The college of William and Mary was founded by royal endowment, around a church as its center. In the South family training, tradition and tastes pointed to political careers then as now. The county was then a great object-lesson for the

study of the constitution of government and society. Politics was then and there fast becoming history. Students had opportunities not unlike those of the lesser clergy and nobles, who came with the greater barons of the realm to the English itinerary parliament, before the House of Commons existed. That Jones saw this possibility of a school for statesmen, and that urban sites for colleges were better than the country, are matters of unbounded praise by the author. "The bucolic view that expects higher education to flourish in open fields," and "professors and students turned out to pasture like superannuated horses and untrained colts and expected to feed on grass like Nebuchadnezzar," are "survivals of the monastic system." Among the distinguished political leaders graduated from this college was Washington who, under the state system which placed land under control of colleges, was appointed surveyor; who was chancellor of William and Mary; who gave an endowment, the fate of which the author thinks Congress should inquire into, for a National University for education in all the arts and sciences and politics. It was Washington who said with "indescribable regret" that he saw young men going to Europe for advanced study. He tried to impress on Congress how much a flourishing state of the arts and sciences contributes to national prosperity and reputation," and wished young men freed from local prejudices and sectional jealousies by association.

The motive of this sketch is the idea of a civil academy in Washington. Picked students should be appointed on merits from all parts of the country, and paid $600 per annum, like cadets at West Point and Annapolis. These "government fellows" should be under no scholastic discipline, but be treated as government employees under guidance of an educational commission. Lectures by both government experts and university specialists should be given. As special rewards a few best men might be sent to study abroad, and be employed eventually by the Bureau of Labor or of Statistics, in taking the census, as consular clerks, etc. The basis of such an institution already exists in the Washington High School, which should be developed into a free government college of scientific politics. This institution might be established by President Cleveland with peculiar fitness, because he is from the "pivotal" State of New York, where a merit system and a State board of Regents, who may sometime control academic degrees in the State, are both found. The Johns Hopkins University has many graduates in the government employ, is nearer to Washington than is either the University of Virginia or the College of William and Mary, and some pages of information concerning it show how national it has become and how it might aid in such a work.

The political part of Washington's proposed university is emphasized somewhat beyond its historic proportions, the influence of Hugh Jones and President Drew over-estimated, and the work of the college of William and Mary represented as disproportionately political. The pamphlet is really an argument for a noble scheme, which is not, however, lifted above a local point of view.

Inaugural address by President E. D. WARFIELD, of Miami University, Oxford, O., June 20, 1889.

A concise sketch of the educational organizations of mediæval universities is followed by a warning against the abuse of degrees, and against the folly of attempting to do too much, and a timely exhortation to do what is done well. An university must be free, and must incite the love of wisdom, becoming thus an organ of the intellectual life of the nation. First those branches chiefly disciplinary must be selected. While holding all branches in honor, especial devotion must be given to those approved by the matured experience of centuries for training and

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development. A broad but profound religious spirit should prevade all. The temper of the address is vigorous, earnest, progressive and wisely conservative, and is another hopeful and significent sign of the present reaction towards an old fashioned disciplinary and wholesomely restricted academic curriculum.

The American College in Relation to Liberal Education. Inaugural address of President DAVID J. HILL.

Dr. Hill was for some years president of Bucknell University, Pennsylvania, and is favorably known by his two successful text-books on rhetoric and on psychology. On accepting the call to Rochester he was given a year's leave of absence to study European institutions. He acts upon the old conception of an inaugural as a confession of educational faith, and so treats briefly language, mathematics, sciences, philosophy, etc. Most important however, is his expression of satisfaction that while the university of Rochester has had the charter privilege of becoming a university in the proper sense, it has honestly been and preferred to be what its resources justified, a college in the true and historic acceptance of the word. "Should it ever expand to the full limit of its prerogative, I trust it will do so by legitimate internal growth, and not by a mere vote of the corporation." He condemns the "shameful competition among rival colleges in diluting courses of study to suit the callow intellectual estimates and even the cerebral weakness of undergraduates, really forming the curriculum on the principle of the market rather than on the principle of scholarship, literally and openly rivaling one another in offering attractions, hardly more dignified than the chromos of struggling newspapers. The result of this is that while most of our colleges wish to be thought universities, most of our universities are merely colleges." The bachelor's degree he adds has an ambiguity that places it in peril of contempt at home, and of ridicule abroad. The function of the college is to prepare for large personal or professional development. It may be to satisfy love of knowledge, to introduce to more special pursuits, give a generous outfit of intellectual attainment, to mature and invigorate the mind, and to give it an ample furniture of general knowledge. In these terms Dr. Hill defines the function of the lycée in France, the gymnasium in Germany and the college in our country.

A People's University, by PROFESSOR J. G. SCHURMAN, of Cornell, University, Jan. 11, 1888.

"We are slaves of an educational sytem, that although admirable in its day is not comprehensive enough" now. A man may be as truly educated in business, or in the workshop, as in the laboratory or seminary. "The equal worth of every subject of study;" "philosophy is not more venerable than wood-working;" "the steam engine is as sacred as Greek;" "the analysis of soils is as important as the analysis of literature;" " we must hold all subjects equally reputable and provide instruction in all alike,"—these are the phases in which Ezra Cornell's" motto, "I would found an institution where any person can find instruction in any study" is enforced. This ideal university is not construed to justify Cornell as Hegel's political philosophy was to justify the constitution of Prussia, but is "deduced" by "independent reasoning." "Cornell has "endeavored to supply all the means of culture," it "stands up for all subjects alike" and "has steadily aimed, and at enormous expense, to make its departments second to none in the country." On this celebration of our founders day let us be assured that "education of the people by the people and for the people shall not perish from the earth."

The College as distinguished from the University, an innagural address by PRESIDENT FRANKLIN CARTER of Williamstown, 1881.

The plea here was for a general old fashioned American education before its specialization. The mind must be made a cosmos, and not enfeebled and distracted to a choas by a profusion and smattering of loose electives. The ancient languages and mathematics are basal, have still the greatest culture power. The college professor must be an inspiring reverent teacher, with power to act benificiently on the development of character and hold character even above science, wisdom above knowledge. The university but not the college professor is an eminent specialist. Dr. Carter warns colleges not to praise themselves until they think themselves perfect and consequently never become so. Religious influences must be strong in colleges, and a plea for a chair of the history and polity of the Hebrew Theocracy is based on the supreme worth to that race of moral ideas. Their mythology was better organized and more ethically effective than that of the Greeks and Norsemen, they were purer than the Greeks, more self-respecting than the Romans, had more family feeling than the English. Their ideas have had vast influence in history and great pervasiveness in literature, and lastly, our Saviour was a Jew.

Inaugural Address of PRESIDENT PATTON of Princeton, June 20, 1888.

After a well-merited compliment to the retiring President McCosh, an university is defined as a home of culture, where learning keeps state, and men are interested in things of the mind, remote from the excitement of trade, a place of endowed research. Religion should not be cultivated to the neglect of science, or science to the neglect of religion, and faith with the dead should be sacredly kept. It is not the essence of a university to have four faculties, Salerno had only medicine, Bologne only law, Paris only theology. "If a faculty of medicine may be an university, a faculty of philosophy may surely be one. And what is a well-equipped college like this but a Faculty of Philosophy?" The *genus* university exists then under several species. Thus "Princeton is already a university if there ever was an university in the world." It has Laurie's three notes of general study, freedom and autonomy. "The genius of the university is freedom, but the genius of such an university as this is qualified freedom." A theological seminary should be under the supervision of the church whose theology it represents. Learning should be called valuable for its own sake rather than for the uses made of it. Yet "original research is a luxury for the few." Most call it "a pleasant land but a barren soil." "Pure science with a practical outlook" is the ideal. "Language should be a ladder to literature and not literature a ladder to language." History must be treated philosophically. The history and philosophy of jurisprudence should also have a place. Philosophy should be treated with great care, but enlarged. Although not ardently in sympathy with "what is erroneously called the new psychology," it should be cultivated. More liberty of electives in the last two years, more fellowships, just restriction of the "phrensy of amusements, and the phrensy of examinations," yet much exercise to lessen the temptation to tobacco and intoxicants, and above all more and larger christianity, are the noble ideals to which this inaugural address was devoted.

Evolution of the University. First Annual Address before the Alumni Association of the University of Nebraska, June 11, 1889, by GEO. H. HOWARD, Professor of History in the University of Nebraska. 1890. pp. 36.

Institutional history treats of living organisms, like a biological science. The history of the university is traced from the embryonal scholastic

guild, represented by both its democratic and centralized type, when the decretals of Gratian and the sentences of Peter Lombard held the staple matter of the *studium generale*, and the privileges and immunities were the Magna Charta down through the thirteenth and fourteenth centuries, showing the evolution of faculties, degrees, officials, ceremonials, etc. The triumph of the college over the university is then briefly sketched, and finally the renaissance of learning in the United States. The author has diligently used the many authorities which he cites, and perhaps it would be hard to cover the vast field here outlined better in so small space. These pages would make a good "finder" for a student.

Mr. Justin Winsor, who has written several interesting University letters from Scotland in the *Nation*, predicts that women are to be admitted to the University of Edinburgh on the same standing as men. Lord Kinnear's parliamentary commission, now in session, which may not make its proceedings public for a year, may also reduce the relative prominence of Greek. At present there are eighteen arts professors, the instruction of only seven of whom is necessary for a degree. It is hoped that this number may be increased from seven to 26 classes of subjects. The 18 chairs have now an income of about 13,000 pounds, of which about half comes from student fees, while of the rest, 2,200 pounds comes from parliamentary grants, and 3,600 pounds from endowments. Salaries are very unlike, and the size of classes seems not to depend very much on the attractiveness of the professor. There is almost no instruction in history, and the professors collect their own fees. This wasteful business administration makes the high achievements of this university all the more remarkable.

The Orbis Pictus of Comenius. Syracuse 1887. pp. 200.

This famous old educational classic which represents the first application of Baconian empiricism to lower schools was first published in in 1658, was the first picture book ever made for children and was for a century the most popular text book in Europe, next, perhaps, to the Satyricon of Capella which for 1000 years was the academic compendium of human knowledge. The original 150 cuts are photographically reproduced. The original Latin text has been retained, but old English substituted for the high Dutch. It is a little encyclopedia in itself of the knowledge of its time, still full of interest to children and adults, as we know experimentally, and its reproduction in such admirable form reflects much credit upon Mr. C. W. Bardeen, its publisher, whom we hope will be encouraged to print the Vestibulum and Janua.

Quelques Mots sur L'Instruccion Publique et Privée dans la République Argentine, par Le DOCTEUR J. B. ZUBIAUR, Paris, 1889, pp. 110.

The author who represented his country at the Paris exposition is inspector of national schools and colleges and editor of *La Educacion*, Buenos Ayres. His ideal is an education that makes man a noble animal first, and does not mutilate him physically. When Spanish dominion ended in 1810, after three centuries, education was at a very low ebb. Now the republic has four million inhabitants, two hundred and sixty thousand children in schools, supported by the nation, the provinces and towns combined, thirty-four normal schools, fifteen national colleges, and two universities, (Buenos Ayres and Cordoba) each with three faculties, law and social science, medicine, natural and physical science, and with 739 students. The university of Buenos Ayres was founded in 1821, in a city of 400,000 inhabitants; that of Cordova in 1622 for the benefit of Indians as well as Spaniards. The alternating periods of anarchy and tyranny have more than once almost made a tabula rasa of the field of educational progress, but since the constitution of 1853, re-

formed in 1860, all seems now settled and the organization and high quality of work will be nothing less than astonishing to North Americans who read this book. Not only the Argentine but other South American states, owe the first and chief impulse to Sarmiento, who was an admirer of Horace Mann, and whose plans included kindergarten and university, libraries, manual training, and a complete co-ordination of all stages of education. Both universities are now regulated by the same national law, which gives the most complete freedom in all internal matters. The rector, and the dean and a delegate of each faculty compose a superior council who nominate professors to the president of the republic. The annual budget of the university of the capital is 320,000 of our dollars, that of Cordova 130,000. The law course is five years, and comprises civil, international, Roman, penal, commercial, constitutional administration and economical law, procedure, political science, finance, philosophy of law and legislation. Each of these subjects has its professors, and civil and international law have two each, making 15 in all. The medical course lasts six years, and has in all thirty courses, including legal medicine, mental pathology, nervous diseases, pharmaceutic chemistry, and chemistry applied to medicine and pathological anatomy with 27 professors. The natural science faculty has 28 professors in each university and a course of six years. Salaries are small, but tenure is permanent, and the long summer vacation falls in our winter, so that an educational visit to these institutions could be easily made. The thesis for all higher degrees and in all faculties must be printed. All faculties require for admission a certificate of six years of preparatory study in one of the national colleges to which latter the average age of admission is 12 years. At the universities the average age of entrance is thus 18. Conferences and lectures are the form of instruction, but thirty absences per year are permitted, and there is a pass and an honorary examination. The buildings for law and medicine at the capital are new, and a monumental university building is now begun. At Cordova elaborate buildings have been voted, but the university is chiefly installed in an old Jesuit convent and its annexes. Among the reforms now desired are a faculty of letters and philosophy, and more encouragement to science for its own sake. Women are now admitted to the medical faculty, and Cecilia Grierson last year finished the full six years with honor. Piñero and Bidau have just published the history of the university of Buenos Ayres in three large volumes.

Of the 15 national colleges the oldest that of Montserrat at Cordova, is more than two hundred years old, and the youngest, that of La Plata, founded in 1884. These are directly under the minister of public instruction, who names the instructors, makes the programs, etc. Their six years course is primarily preparatory for the universities, but contains much local history and geography, Spanish literature and civic, economic and philosophic material, with Latin and French, but no Greek, and is obligatory for all. Latin is very much in debate and is feebly taught. To enter boys must have satisfied the requirements of primary education, and graduate with the title of bachelor. There is no internate or boarding system, and no national prizes. Each instructor must have between four and eight hours of work per week, and may retire after ten years service on half pay, two-thirds after fifteen, and full pay after tweny-seven years service. All these institutions cost more than half a million dollars per year, had last year 2,626 pupils. The college of Buenos Ayres is largest, and has 87 teachers, among whom are not a few foreigners, and 927 pupils. These are under the immediate control of three inspectors and a council of secondary, like that of primary education is contemplated. When stipends were surpressed in 1876, the students of the college of Uruguay formed a society which now supports 80 students.

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There are now thirty-four normal schools, all founded since 1871, of which thirteen are for men, fourteen for women, and seven are mixed, and all with practice schools. These are of two grades, higher and lower, and the course lasts from three to five years, and have all told, over 11,000 pupils. The plans of the normal buildings at Buenos Ayres, and at D. Entre Rios are very interesting Primary education represented by 3,227 schools, and 254,608 pupils, or about half the school population is by law obligatory, free graded and hygeinic and in one province lay. The revenues at the disposal of the council arise from fifteen different sources. The republic publishes ten journals.

Liberty is to man as oxygen to plants, and now an army of instructors pour the baptismal water of science on the heads of the rising generations. Education is practical and seems especially designed not to make orators to whom so much that is sad in the history of the country is due, so that there are no courses in literature. The demands of the future are first of all a better organization of the many parts of the system, the enlargement of the many trade and industrial schools, school houses plain but spacious. Six of the best professors are to be sent to Europe the present year by the government, to study educational questions. Work for discipline and schools is the Argentine synthesis and motto, and in several other Latin American Countries, teachers, more than laws will decide the future of humanity. The prodigious ardor of European races transplanted to the new world has made the southern states surpass Spain as the northern are soon to surpass England, and has already attracted the most favorable mention by many European authorities.

Report to the Trustees of the Dick Bequest on the rural public (formerly parochial) schools of Aberdeen, Banff and Moray, with special reference to the higher instruction in them, by S. S. LAURIE, Professor of the Institutes and Hist. of Education. Edinburgh, 1890. pp. 150.

Only five hundred copies of this report of the visitor are printed. The history of the Scotch parochial system begins in 1560, with John Knox's first book of church discipline and policy, which is called "the most interesting of all documents in the early history of past reformation education in Europe." Every Kirk must appoint a schoolmaster of grammar and Latin, even if the population be so sparse that the youth can meet but once a week for instruction in the catechism. The larger the town the larger and the more time given to the school. Their parents must be *compelled* to replenish the universities. After 1633 schools were established in every parish, for which the bishops might impose tax. The presbytery fixed the teachers' pay, which was to be readjusted every 25 years, according to the average price of a chandler of oatmeal. Only in 1861 was the power to examine teachers transferred from the presbyteries to boards of examination appointed by the courts of each of the four universities. The heritors and minister of each parish could dismiss or censure teachers for neglect of duty, and the county sheriff for immorality. The heritors can assess themselves for several schools, but only to a limited amount, and the presbytery's power of visitation was not repealed. Thus teachers are virtually appointed *ad vitam aut culpam*. James Dick, who died in 1878, bequeathed 113,147 pounds, yielding an annual income fluctuating from seventeen to twenty-seven thousand dollars for the benefit of country parochial schools in the three above counties. This fund must be used to encourage the best schoolmasters in such a way as not to diminish the extent of the present support of these schools. The trustees accordingly first imposed a severe examination on all teachers wishing to share the bequest. Marks, each with a money value, were attached to all the higher subjects, and

for merit in teaching. The trustees and local clergy report to each other, and thus the confidence of the latter in this intrusive alien "authority" is secured. Biennial visitations of schools are made. After 1861, the government also aided and inspected annually such of these schools as conformed to the conditions of the parliamentary grant. In 1872 these schools were removed from church control and given to boards of elected rate payers. At this time, of 150 teachers in these three counties, 130 were masters of arts, as were hardly one in fifty elsewhere in Scotland. There had been a steady flow of young men from these counties to the university, and as payments are graduated anew by merit each year, the stimulus is constant. The teachers must now first of all have a good government record, and higher subjects began to disappear from these schools. During twenty years, ending 1879, of the highest fifty annual entrance bursars, 20.4 per cent. came direct from parochial schools, and this downward tendency in university subjects was only checked where the Dick bequest was applied. The annual bursary competition for Aberdeen University had long been the common meeting-ground for boys from the northeast of Scotland, who sought an university education, but were poor, and had become the sole standard by which the training in both grammar and parochial schools was measured and compared. But with more travel, the opening of the lower branches of the civil service training colleges, the new examinations required of low-agents and pharmacists, other standards arose. Higher subjects are pursued elsewhere, and Latin, French, and advanced mathematics, formerly often found in these rural schools, are now rare. The Dick fund must now be applied to advanced science, modern languages and literature, as well as to Greek, and whenever a master does this work, which is beyond the requirements of the government code, though he send a boy to the university only every two or three years, he should benefit by it. Advanced work in other than university subjects should be rewarded. In olden times the universities had preparatory classes which brought them profit, and hence they had no interest in organizing a good secondary education. Now the rising standards of the universities remove them still further from parochial schools. To prevent this is one purpose of the Dick fund. Mr. Craik's new code of 1890 bases government grants on average attendance, and are paid without individual examination, so that teachers are now free to educate children. This change is very favorable to the Dick fund, which will now reward any subject whatever beyond the required standard. The larger body of bright boys in these 123 schools will be aided, and at the worst the university candidates must go elsewhere at a certain stage of their training. Dick examination papers, the new code, etc., are appended. The book as a whole is full of interest, and shows the practical work of a professor of pedagogy to great advantage.

De la Réforme de l'Enseignement Superieur en Belgique par AD. DE CEULENEER and CH. DUMERCY. Louvain, 1876. pp. 75.

This little pamphlet, written while the important law of 1870-5 was pending, is a plea for a reorganization of the Universities of Belgium, so complete and ideal that it merits a lasting place in the history of reforms. During the long provisional regime, lasting since 1830, Belgium had shown the tendency, too familiar in our own country and which always marks educational decadence, to discuss questions on which there were grave differences of opinion, rather than to solve those on which convictions and interests agreed. The field of the commission of 1870 was limited to programs, examinations and degrees, but the discussions of the next few years took a far wider range, and the young authors of this pamphlet plead for a radical general reform. Belgium,

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they say, has not profited by the experience of neighboring lands, and less than any of them has studied the problems of higher education in a broad comparative way. Educational institutions keep up the scientific spirit, and not *vice versa*. They must keep the nation up to the level of the highest in all that makes for progress. Universities are not primarily professional schools. So inert have the authorities become that it is almost by a conspiracy of disinterested devotion to science that the scientific spirit, which is the life of the present time, has been kept alive. Universities which are mere examination laboratories can do little to cultivate pure science, and if love of this is not supreme its very application to the useful arts languishes. Science should be free from without and from within in proportion as it is pure and absorbed in the love of truth *per se*, and its degradation to utilities and the subordination to programs, professions, etc., has been more cause than effect of its loss of proper liberty. As for examinations, neither the system of a central jury of 1835, nor that of combined juries in 1849, has worked well with either the official nor the two free faculties which they were intended to place on an equal footing. The free faculties disliked official intervention, and the rivalry of the two systems was often angry and injured rather than advanced science. Again, if an advanced student develops marked taste and ability in a special part of a prescribed program, he should be encouraged to consecrate himself to it and be allowed to justify his work in it by an examination for a degree and not be forced to spread his activity over the wide field of the official program. Students should not be inert material to be wrought upon and worked over by a prescribed plan, but should be regarded as living and free beings, and their rights of initiation not only respected but encouraged. As for freedom in the exercise of the liberal profession, the United States is now the only country in the world where this is permitted, and civilization and education there are at so low an ebb that its condition may be described as barbarism illuminated by gas. To leave the legal profession free would be to surpress it, while in medicine it would open a vast and dangerous career to charlatanism. The opposite extreme of a complete monopoly of education would be preferable to this. The authors give with some detail a scheme of professional examinations for advocate, notary, state engineers, pharmacy, and doctors of medicine. A diploma of doctor of laws should be required of each candidate of the two first subjects. In all there should be two examinations, the first for a diploma, and the second professional, with an interval of at least a few months between each. If the two free were homologized with the State universities, so that students might be left entirely free to fit for examinations wherever they deemed the opportunities best; the free and State institutions would be brought into no less wholesome rivalry than are the too free institutions to each other. Professional examinations ought to be made before a large jury annually, named by the king, and self-divided into sections of eight each, of which half should be professors (two each from the free and the official universities), and half lay leaders in the respective professions. It should hold two sessions per year at Brussells. The subject-matter of examination should be much narrowed, and requirements should be far more restricted but far more thorough, and should by no means be as extensive as the subject matter taught. The sentiment, too prevalent now, that salvation consists in increasing the scope and number of examinations, is the exact opposite of the truth. They are now so many and vast that it is impossible to make them severe or even serious. They require *et omnibus aliquid, et in toto nihil*. Each examination ought to correspond to a distinct scientific grade. There should be two, candidate and doctor, the first crowning general and the last special attainments, in each of the following courses: philosophical, historic,

philological, natural science, physics and mathematics, and the professions. To take the doctorate of political sciences, one must have already become doctor of laws. No professor should have exclusive apanage of a scientific field, but a young instructor should be so placed as to freely compete in all parts of the field. The scientific spirit spreads in a nation by means of such modern methods as seminaries, bibliographies, *raisonnées* of each course, which should be required of each professor, large prizes for inter-university competition, travelling scholarships and fellowships, which should be far more carefully planned and supervised than now. Many little prizes and competitions, as well as a few large ones, that distributive justice may be done to all the 60 state fellowships, should be increased to 80, larger competition and rewards reserved to those who have taken final degrees; the migrations of students from one university to another, which is one of the chief causes of the vigor and wholesome competition of German universities.

La Liberté dans l'école.—Première traduction francaise, par B. Tseyttine et E. Jaubert, avec une lettre de M. Michel Bréal. Deuxime edition, Paris, Nouvelle Libraire Parisienne, ALBERT LAIME, Editeur. pp. 285.

This work of Count Tolstoi was written in 1862, but has been translated only into French, and that not until 1888. It has apparently not attracted much attention from English readers. The reforms for which it pleads, have made much progress since it was written, but the complete realization of the theories advocated is still far in the future. This makes the book still of interest and value.

"Liberty in School" means to Count Tolstoi something more than a possibility of pursuing elective courses in colleges and schools of the highest grades, though it includes this. It means freedom on the part of the parent to send his child to the elementary school or not as he pleases, though this may involve the possibility of a child's coming to maturity without a knowledge of reading and writing. So far from shrinking from the conclusion to which his theory leads, the author denies that a knowledge of reading and writing is necessary to a life of industry and virtue. In connection with this it should be remembered that Count Tolstoi's philosophy places the greatest stress upon industry and self-support, even to the length of making them the means and method of virtue. The argument for liberty is made to rest on facts open enough to any body, but of new significance when interpreted by a man of genius. There is in all communities a class that desires to be instructed, and a class that desires to instruct, yet the class that desires instruction has to be forced by the class that instructs to receive that which the latter desires. The explanation of this strange fact is found in the supposition that schools do not supply the kind of instruction needed, nor give it in a manner suited to the wants and powers of the class to be taught. That schools which are in any manner or degree compulsory can ever satisfy the class that demands instruction is denied on the ground that no one class in a state can know what is best for any other class, nor any individual know what is best for any other individual. While all schools have made the learning of some one or more things obligatory, there has been diversity of subjects in different countries, and changes of subjects from time to time in European countries, and at present the number of sciences to be taught is so great, that the task of selecting and dividing has become impossible to achieve. That it is impossible to answer the question why one thing should be taught rather than another, is shown by a review of arguments, classed as religious, philosophical, experimental and historical. The religious and philosophical arguments are both refuted

by the statement that there is no argument on either subject; while the advocates of all systems agree as to the end to be gained, there is the greatest disagreement as to the means of reaching the end, and experience yields no results that justify the claims of one system over another.

The argument from experience meets with no better fate. That attendance in schools can be required on account of the results in virtue and intelligence is denied. During an extended examination of the schools of France, Germany and Switzerland, Count Tolstoi became confirmed in his belief that children are debased in morals and in intellect by the methods and matter of instruction. Whenever he put a question to a child in school, the child invariably tried to recall something learned in a book, usually a form of words. In some cases the examiner asked for written compositions on the subject: "What did you do last Sunday?" Boys and girls without exception, wrote that they had used all possible opportunities to pray to God, and had not played. Nowhere did he find wholesome, mental or moral activity due to the school. The principal part of instruction he declares is gained not from school but from life. Schools are established he says, not to instruct the people, but to fashion them, or make them over, after our method. Schools are not organized to make study easy, but to make it easy for the teacher to give instruction. The teacher does not like a noise when he is talking, he is annoyed if any one speaks or moves; hence children are forbidden to ask questions, to talk with one another or to move about. The school does not reply to questions which the life out of school leads children to ask; it does not provoke questions of any kind. It answers questions which for ages the human race has asked, questions of little interest to children. How was the world created? Who was the first man? What is Asia? What is the shape of the earth? How are hundreds multiplied by thousands? To questions which his own life prompts him to ask, the child gets no reply, but that according to the rules of the school he must not open his mouth to ask to go out, but must make signs lest he disturb the teacher. Among the reasons cited for the almost total lack of useful results of school instruction are the efforts to make instruction uniform and mechanical, to arrange things in a manner, and according to a method that may serve for every teacher and every pupil, and the throwing of children into a "school trance" (*état scolaire*). This last condition, universal in schools, though little recognized by teachers, is described as consisting in stifling all the higher faculties of imagination and creative power to give place to the semi-animal faculties of apprehension, memory and attention.

To the statement that the schools of the present time have been elaborated by historic evolution, Tolstoi replies that schools and teaching have not kept pace with other means of instruction, and that relatively with other organic parts of the state, schools are lagging in the rear. The school of the middle ages, circumscribed as it was, filled better the function of a school than the schools of the present day do. Schools have not developed the people but have been developed because the people have developed, and as the development of the people advances the more instruction withdraws from the school into the paths of general progress. This will go on until the content of the school has been reduced to nothing. Extended commercial relations, ways of communication, the participation of the individual in the affairs of government, museums, public libraries, courses of lectures, not to mention printing which alone supplies the means of knowledge, separate by a vast interval the schools of the present from the schools of the past.

A science of pedagogy, he believes not only does not exist but is forever impossible. "The present generation does not know what is necessary for the perfecting of man, and if it did, could not impart it to the

rising generation. The knowledge of good and evil exists in the whole human race independent of the power of man, and is developed spontaneously in the course of historic evolution; it is as impossible by instruction to engraft our conscience upon the next generation as to take from it the particular conscience and the superior degree of conscience that the preceding stage of development has brought to it.

Instruction is an evolution, and therefore has no final end. It is an act of man based on the need of equality and the invariable law of progress. The mother teaches her child to speak that they may understand each other. Instinctively she tries to descend to his manner of looking at things, even to his baby talk, but the law of progress does not permit her to descend quite to his level, and forces him to raise himself to her. The same relation exists between the writer and the reader, the school and the pupil, the government on one hand and the people on the other. The action of him who instructs tends to the same end. The science of instruction has for its one object the study of the conditions which favor the meeting of these two movements towards a common end, and of those which hinder it."

Count Tolstoi concludes this part of the book by saying that he knows his arguments will not convince the public; that his fundamental conviction, that the sole method of instruction is experience, and its only criterion liberty will sound to some like a commonplace, to others like an obscure abstraction, and to others still like an unrealizable utopia. Nearly a generation has passed since he wrote, and he has many readers to-day who belong to neither of these classes. There is even a small number who find that he has strongly expressed convictions which have been slowly forming in their own minds.

ELLEN M. HASKELL.

École du Livre.

This is a new school founded by the city of Paris for instruction in everything involved in book-making. It was proposed by M. Hovelaque, and is directed by M. Magnuski, who prepared for his work by some years of study and travel. It is a day school from eight to six p. m., with two meals, and receives boys of 12 who have finished the lower primary school. About 100 were admitted the first year from 300 applicants on a competitive examination. There are 17 courses in all including type-casting and setting, drawing and engraving of various kinds, binding, etc. Chemistry, *e. g.* is taught, but not at all as pure science, but only so far as is necessary for ink-making, photography, etc., and art is entirely subordinated to its application, etc. The first year all the studies are hastily passed through and the pupil then concentrates along the lines of his tastes and aptitudes. A very large new building is being erected as the permanent home of the school on the Rue Vauquelin. The instructors in the school were appointed by competitive examination under a jury named by the candidates. The photo-engraving school at Vienna, the city type-setting school at Barcelona and the admirable Plantin museum of all the tools and processes of book-making will all be excelled, if the museum of the new school is completed as planned. The school has been very quietly inaugurated with very little talk and no theorizing save that modern trades are narrowing and a workman is better if he know something of all parts of his trade, and knows a little of its larger, scientific, social, industrial and hygienic bearings.

Le Prix de Rome.

This a prize awarded by competitive examinations to native Frenchmen under thirty, by which one painter, one sculptor, one architect and one musician are annually sent to Rome for four years. It is a govern-

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ment prize dating from Louis XIV. and yields to each student over seven hundred dollars a year, payable monthly, besides traveling expenses. The examinations are severe and rigid. The preliminary examinations last from seventy to one hundred and twenty days. Those selected here pass a second examination of two days locked in cell-like cages. At Rome they cannot marry or work for money. All twenty of them live together an ideal life of the days of Lorenzo, The Magnificent. They dine at a common table, but each has his chamber and atelier. The social life is like an ideal gentleman's club, and everything in art in Rome is freely opened to them. They not only keep up the spirit of the modern French school, but influence even young Italian painters. France, Belgium, Germany, Russia, Spain and other countries have established similar schools in Rome.

Fifteen hundred American art students were enrolled last year in the studios of Paris. The author pleads for a national art school in this country, government prizes of money and an American Villa Médicis at Paris for prize students. Each congressional district should send candidates, and each prize student should furnish annually a work of art for our public buildings, galleries and parks.

The Pedagogical Museum of St. Petersburg:

A brief history and the latest report of which lies before us, was established in 1870. It is governed by a committee composed of university professors and citizens of high rank, and is under the immediate protection of the Czar and Czarina of all the Russias. The date, hour, minute and second of her majesty's visit to the institution some years ago, is inserted on a marble slab in the hall, by order of the Minister of War. Its character presents unique features. The collections fill several large rooms, and consist of many sets of pictures, often in colors illustrating Russian history and ethnology, costumes, industries shown by small human figures under glass, ideal geological landscapes, facsimiles of old documents and seals, scientific material, picture books in large numbers etc. The regular normal course lasts two years. Forty male interns sleep and board in the building, teach under supervision. Their smoking room, the room for individual tea-making, the lamps on each desk in the practice school to light both ends of the short midwinter Russian day, the magnificient singing of forty male voices, which forms an important part of the school course, all these made upon the writer during a recent visit, an impression as unique as it was pleasant. All the collections are kept up and enlarged on a grant of 1000 roubles per year.

The winter courses of lectures held here are of the highest character, and by the scientific leaders of Russia, and the room which probably seats less than five hundred is usually full, and a fixed per cent. only of the tickets are free. Concerts, music-classes, courses of lectures for the people, for soldiers, military and other classes of students are held. Here the powerful and important society for promoting family education under the patronage of the renowned princess Ekaterina Michailovna, meets as well as the sanitary society of the city and female students of the higher institutions. The desire to attend nearly all courses or meetings held is very strong, but the authorities limit the attendance so as to prevent a crowd. Russian literature and life are the most popular of these courses, and next comes technical processes. All the resources of the museum are at the disposal of the lecturer, and here is the chief point of contact between the Russian savant and the people. In this respect we have here an analogue of the public courses of the French faculties. Its usefulness is great to student, teacher and the public, and nothing like it exists elsewhere in Russia. The loaning of apparatus to other institutions which was the practice so long as the

museum was meant to be in any sense a central depository of instruments, has been limited if not discontinued.

School life in relation to growth and health, by PROF. AXEL KEY, Stockholm. Address before the International Medical Congress in Berlin, 1890.

The commission of which the author is a member, and which was appointed just after the appearence of Dr. Hertel's important study in Copenhagen in 1881, has weighed and measured 15,000 boys from the middle schools, and 3,000 girls from private schools, and examined them as to health. The results show that boys pass through three distinct periods of growth; a moderate increase in the sixth and seventh years; a weaker growth from the ninth to the thirteenth years, and a much more rapid increase in height and weight from the fourteenth to sixteenth year. The growth of girls is also periodic, but comes a few years earlier than boys. Swedish pass American boys in height and weight in their nineteenth year. The period of rapid growth begins earlier with well-to-do than with the poorer classes, but is more rapid with the latter. Malling-Hansen found that children grew little from the end of November to the end of March. From March till August they grow tall but increase least in weight, and from August to November the increase is mainly in weight and height is least. During this latter period the daily accession of weight is often three times as great as during the winter months. All this bears directly on vacations.

More than one-third of Prof. Key's boys were ill or had chronic maladies. Thirteen per cent. had habitual headaches. Diseases of the heart and intestines increase in the upper classes. At Stockholm seventeen per cent. of the children were ill at the end of the first school year. The illness-curve rose to 37 per cent. and in the fourth class to 40. Illness periods coincide with periods of weaker growth. The healthiest year with boys is the seventeenth, which is also the year of most rapid growth The eighteenth is unhealthy. Among the girls 61 per cent. among the well-to-do classes have serious chronic disorders. Thirty-six per cent. had chlorosis, and many habitual headache, and ten per cent. spinal disorders. These were also mainly school diseases, induced chiefly by sitting still and in general by organizing girls schools after the pattern of those for boys.

Biologiseche Zeitfragen, Schulreform. W. PRIEGEN, 1889.

Pedagogy must now be at bottom physiological. This is now the watchword of the new modern christianity, which has too long been repressed by the materialistic heathen classical view. A patient would hardly trust a doctor who could make facile translations of Euripides. Much in even Goethe and Schiller is no longer consonent with modern Germanism. A critic complains of these views, which, it is said, leave us to infer that the only literature really German is physiological, or a chauvinism which tends to alienate even the friends of the proposed school reforms.

Education et Hérédité. Etude socialogique par M. GUYAU. Paris, 1889.

This posthumous work of the brilliant author assumes an apparent antinomy between education and heredity, which must be overcome by suggestion, a term borrowed from hypnotism, which is able to create artificial instinct, and thus represents a force hardly inferior to heredity. Education is defined as the ensemble of co-ordinated and reasoned suggestions. The power of habit, the illusion of freedom, the origin of the ego, are forms of permanent suggestion. Education is a form of morals, and seeks the means of harmonizing the most intensive individual with the most extensive social life. Yet morals are chiefly a

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form of social life, for although the individual might form an embryonal sense of obligation, the latter takes a totally new and larger form when considered from the social point of view. Education, then, must facilitate the passage from egoism to altruism and "loyalism."

Die Natürliche Erziehung. E. HAUFE. Meran, 1887. pp. 240.

Classical philosophy is not destroyed by natural education, but simply withdraws from preparatory schools to take its place in the University with Hebrew, Sanscrit, Assyrian, etc. The cosmos began with physico-chemical elements and processes; with physics and chemistry education should also begin. After the study of inorganic nature should come biology, physiology, etc., as organic life was evolved later from lifeless elements. The highest cycle and last phase of creation is psychological, and in this education should culminate. Thus the curriculum should epitomize and reflect the "world-work." Each stage should not only connect with the lower preceding, but should continue and enlarge and expand it. In the third or psychological stage, *e. g.* not only biological principle should all be continued and expounded, but physics and chemistry should be kept up in their most advanced phases to show how every vital process bottoms upon them. Even morals are best taught not from history but from the law and order of the inanimate world, and the "rights and duties of fluidity," which are elementary and will appear from sympathetic study. "Water forever does its duty in the service of nature and man," etc.

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